THE PRINCIPLES AND INTERPRETATION OF ACCOUNTS

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PREFACE

MANY teachers and the majority of students of book-keeping probably see no justification for the writing and publication of yet another book dealing with accounts. If this be true, then the following pages will only prove of value in so far as they show another approach to the subject and meet the needs of those students who are not concerned in their working hours with the keeping of books. It might be said with truth that in most book-keeping classes the emphasis has been placed on the routine of recording business transactions. This emphasis is understandable in some measure by reason of the requirements of commercial undertakings and of normal examination papers set in the subject. When combined with the inevitable element of unreality obtaining in a classroom, where transactions are given in a book, these factors have resulted in the failure of many to see that accounts are but a means to an end. Thought and imagination must be exercised by the reader of any book, the necessity of which is certainly not less in the case of a textbook on book-keeping. Even were it possible, space does not permit a writer to sketch the type of man a particular debtor or creditor is, but the student ought not to forget that in his actual business experience similar transactions will be carried out by live men—some cautious and conservative in outlook, and others the reverse. Accounts are made for men and not men for accounts. Day-to-day transactions are recorded in the Ledger; the Trading and Profit and Loss accounts epitomize the achievements of the enterprise during a period and the Balance Sheet shows its financial position at a particular date.

From a consideration of this and other available data those responsible for the administration of the concern must decide on the future policy to be adopted. Future business action must be decided by reference to facts recorded in a firm's books as well as to external conditions. Once the implication of this truth is fully appreciated, students will cease to regard a book-keeping exercise merely as a complicated arithmetical problem leading by tortuous paths to the "right net profit." The exercise should become the story of a living business organized by men actively engaged in satisfying a demand with benefit to all concerned.

If it be conceded that accounts and Balance Sheets should be one, at least, of the means by which an enterprise is guided

toward greater efficiency and success, then it follows that records be viewed by critical eyes. The efforts of students and the instruction of teachers should be directed to the task of fostering the faculty of criticism and the formulation of judgments. This ability to criticize may be inborn in some students, but its development in any person is the result of "thinking" as distinct from "recording."

Most teachers are continually adding to their stock of questions and in many cases they will rightly prefer the original or, at least, unusual type of problem. One interesting type of question is that based on the familiar intelligence test of the psychologist of which examples will be found on pages 95 to 97. These questions have the advantages of causing the student to think, of being easy to mark, and of affording a guide as to the relative merits of students as reliable as the more involved exercises. For this last reason standard tests can be built up and used as term tests to supplement the normal examination paper. Such tests will probably prove easier to handle if special papers for students' answers are prepared separately.

Lastly, if and when the ability to analyse and criticize has been acquired, students will realize that book-keeping is but one of a number of closely connected and inter-related subjects. Thus, where a business is manufacturing a product or rendering a service, cost accounts are essential if accurate estimates are to be given and reasonable prices charged. The recorded transactions are those which form the bulk of a firm's internal business statistics, and such statistics are an integral part of a market research conducted to improve the method of distributing the manufactured products. A campaign undertaken to advertise a commodity already in the market must be based in part on the results already achieved and such results are to be found in the firm's records. Or again, the success that follows the efforts of a sales manager is reflected, in so far as volume is concerned, in the ledger accounts of his firm's debtors. When the student realizes the relation existing between book-keeping and other cognate subjects, and turns an inquiring mind to a study of the problems they present, his ability to form a balanced judgment of facts presented to him will be considerably greater.

In concluding this Preface I must express my indebtedness to the London Chamber of Commerce and the Royal Society of Arts for their permission to print questions from their examination papers, and to E. A. Hastings-Till, Esq., of Remington Accounting Machines, W. Desborough, Esq., O.B.E., of Powers Samas Accounting Machines Ltd., for their valuable assistance in the treatment of mechanized accounting. I am similarly

indebted to the Exchange Telegraph Co. Ltd. for permission to use material drawn from the files of its statistical service.

Conscious as I am of the shortcomings of these pages, I can only express the hope that those who read them will not suffer in silence but will write me concerning those points wherein they consider I have erred by omission, commission, or undue emphasis.

H. L. E.

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(*Note.* After most chapters questions have been inserted, and after Chapter 10 revision exercises are given.)

THE PRINCIPLES AND INTERPRETATION OF ACCOUNTS

CHAPTER 1

GENERAL PRINCIPLES

To know with some degree of precision the aims and objects for which an operation is undertaken is to be armed with some criterion by which the results may be judged. This is true of the art and science of book-keeping, whether it refers to the records of the fifteenth or the twentieth centuries. The objects common to the book-keeping of all enterprises are the recording of facts and transactions as an aid to imperfect memories and the control of present and future actions. A prudent housewife may make calculations regarding her family's income and expenditure with a view to curtailing the latter. An efficient businessman will record his dealings, perhaps rather more systematically than his wife, with much the same aim and hope—an increasing excess of income over expenditure.

Considering in more detail the varied activities of the business world, it becomes evident that the many relations possible between its units call for record and control. The financial relations between firms and their debtors and creditors, between societies and their members, are but a few instances of these. Partners will require to regulate their relations between one another. Every income tax payer will wish that his indebtedness to the Commissioners of Inland Revenue shall be clearly ascertainable and not too large a sum.

The acquisition and disposal of small businesses and the amalgamation of large concerns are made possible and facilitated by adequate and accurate accounts. Behind the growth of multiple shop organizations and large departmental stores there is a history written in accounts and statistics which has contributed in no small measure to their success. The price paid for a manufactured article or a journey in train or bus is normally decided after reference to accounts specially drawn up to indicate

the cost of the article or service rendered. Sufficient has been said to show the wide variety of, and the uses to which, accounts may be put so that we may proceed to a consideration of the general principles involved.

To interpret accounts and financial statements is to perform a function similar to that done by an intelligent reader of any literary work. The ability to learn from the printed word is commensurate with the reader's ability to understand the meanings of words and to penetrate behind them to the thoughts which they purport to express. Much the same applies to the material provided by the book-keeper or accountant. Just as the words which flow from a writer's pen may be misunderstood, so may the figures abstracted from a Ledger. The novelist selects his characters and his puppets obey his every whim, whereas the accountant has his characters selected for him and his freedom in recording their actions is circumscribed within comparatively narrow limits. There is a further difference in that normally we read literature for amusement or cultural purposes but our examination of, say, a Balance Sheet is carried out for the specific purpose of understanding the present position of a concern and of regulating its future business actions or policy.

In actual practice the book-keeper is called upon to record business events which have taken place, and to assist him there will be figures supplied by his colleagues. The student in the classroom is, however, thrown back upon the statements made in a textbook, an examination paper or even by an instructor. Thus, in the first place, verification of the original facts is possible by investigation but in the classroom this is impossible. In either case the process of interpretation is the reverse of the historical aspect since an attempt is made to deduce the facts that led up to the record. If no error has been made in the process of book-keeping, then the interpretation placed on the data should be the true one. For the time being we may assume that there is no intention on the part of the book-keeper to mislead those who will subsequently see his entries. We may also postpone the consideration of such records as may be made for the purpose of concealing from its competitors the real facts concerning an enterprise.

It is obvious that the book-keeper must understand the transactions he is called upon to record if the entries made are to be accurate representations of the facts. Similarly, the "investigator" must appreciate the facts behind the entries, and inability to do this must lead to wrong conclusions. Where a knowledge of business facts is not being amassed by the student in business experience it must be obtained by reading or conversation.

During his reading the student should aim at an appreciation of the simple essentials which are involved and guard against the possibilities of reading more into a transaction than is justified. A simple illustration will show what is meant.

A textbook reads: "On 10th October, E. A. Jones sold L. R. Smith goods valued at £50." The inference that should be made is that a sale has been effected, and, what is equally important from the book-keeping point of view, no cash payment has been made. We have no knowledge of the goods—what they cost Jones—whether he has made a profit or loss by selling them for £50. The number, weight, unit value, colour and condition of the merchandise are not disclosed and, further, though we know Smith has been granted credit, we have no indication of the time over which payment may be spread or whether a cash discount will be allowed. To ensure accurate deductions, concentration is essential and this involves serious attention to, and careful reading of, the printed word and figures. We may, therefore, summarize the scope of our study into three sections or stages—

(*a*) the events requiring to be recorded,
(*b*) the records made, and
(*c*) the interpretation and criticism of the records.

The recording of transactions may be made by hand or by the aid of a machine, and, as we shall discuss book-keeping by machines at a later stage, the physical aspect need not delay our attention from related problems. One of the reasons for the introduction of machinery into the office and counting house has been the growth in the size and complexity of the business unit. An increase in size has normally meant an increase in the number of books to be kept, while the greater complexity has entailed the collection of a greater variety of data at the same time. A greater volume of data to be collected and assimilated has meant an increasing degree of specialization among the clerical staff, which so frequently results in an individual failing to see the import of his task and its relation to the whole. If a cog in a machine does not function properly, the whole machine may still run but it does not run with 100 per cent efficiency. This tendency towards complexity may be offset by that attention to essentials which has already been advocated. Each subsidiary book and each account has a central and, in the majority of cases, a simple function to perform. An appreciation of the aim and purpose behind each account makes the understanding of its contents an easier task.

Accounts were invented by men for men's use. It is not true and ought never to be true to say that men are of less importance

than accounts. Differences in the constitution of an enterprise, differences in its organization, administration, and ideals, are responsible for differences in its accounting methods. The subject-matter calling for record in the case of a wholesaler differs from the data arising in a manufacturing plant. There is much to record that is common to both these concerns but there is one important difference that must be appreciated by the student.

Let us consider the main accounting problem of the manufacturer. His factory is receiving raw materials and/or partly manufactured articles which, during their transition through the works, will be turned into articles ready for distribution and use. The form and content of the raw material is transformed—planks of wood become tables and chairs, coils of wire become cables, or rubber and cotton emerge from the factory as tyres, or mattresses. A wholesaler, however, normally effects few changes in the purchases he makes; probably his most important function is to break down the large volume of goods entering his warehouse into smaller quantities for re-sale. To effect changes in his raw materials costs the manufacturer sums which must be added to his cost prices if he is to work at a profit. Such costs will in most cases be recorded in the aggregate but greater detail is essential if he is to fix profitable selling prices. It is evident, therefore, that in addition to recording transactions concerned with the purchase of raw materials and sales of manufactured articles there must be recorded the facts relative to the actual processes of manufacture. Such accounts are covered by the generic term "cost accounts," which term, as will be seen later, embraces the accounts necessary to ascertain the costs of a service.

In passing we may note that the challenge to Great Britain's industrial supremacy, which began in the last quarter of the nineteenth century and has not yet ended, has given to these accounts an importance which merits the serious attention of all concerned. An efficient system of cost accounts is essential to any manufacturing or servicing firm if it is to withstand competition from home and foreign firms.

The student may argue that the element of cost must also be considered by the wholesaler and retailer, no less than the manufacturer, since in the operation of their businesses expenditure is incurred. The relation which such expenditure bears to the revenue of the enterprise determines its profitability and, in the long run, its term of existence. This is true, and the amounts expended must be accurately recorded so that prices may be fixed, profits calculated, and future policy framed. Despite these elements of similarity in all commercial and industrial

undertakings, the term "cost accounts" has, with minor exceptions, been applied to the records kept by those engaged in manufacture rather than to those concerned primarily with the function of distribution. It is in this sense that cost accounts will be dealt with in these pages.

CHAPTER 2

ACCOUNTS

THE facts of a financial nature which the merchant should record, for both present and future use, may be conveniently classified in the following three groups—

1. Data relating to his property and assets.
2. Information regarding his financial relations with other individuals and firms.
3. Particulars of his own expenses, losses and profits.

When each of these three groups is considered it will be apparent that each may be subdivided into two further groups, of which one is the converse of the other. The above groups of data may therefore be expressed as under—

1. Facts relating to the acquisition of property and assets.
2. Facts concerning his debtors.
3. Particulars of his expenses and losses.

1*a*. Facts relating to the disposal of such property.
2*a*. Facts concerning his creditors.
3*a*. Particulars of his profits.

The sense of orderly classification indicates that the facts falling in each of the three groups should be kept separate, and that the subdivisions should be demarcated. Within the sub-groups greater and more intricate analysis is possible and, in the case of larger enterprises, necessary. Common sense would suggest that in the case of Group 1, facts relating to the acquisition and disposal of any property should be adjacent to each other unless other considerations make it undesirable; whereas in the case of the two remaining groups separation is necessary.

The space devoted to transactions concerning any one particular item of property, person, or expense, etc., is termed an

CASH ACCOUNT

Dr. *Cr.*

1935 Nov.		£	*s.*	*d.*	1935 Nov.		£	*s.*	*d.*
14	To Balance .	35	–	–	14	By Sundry Expenses	1	10	–
14	„ Sales .	20	–	–	14	„ Purchases . .	6	–	–
15	„ L. Wright	5	–	–	16	„ Machinery .	30	–	–
					16	„ M. Hill . .	5	10	–
							43	–	–
						„ Balance . .	17	–	–
		£60	–	–			£60	–	–

Account. Entries made in these spaces or accounts will give the date of the transaction, brief particulars concerning it and the amount of money or value involved. If the reader will imagine that he is the proprietor of the firm whose transactions are to be recorded, the example on page 6 will illustrate these points.

In this case you are recording the acquisition and disposal of a form of property—cash—and an observant person would notice that the account is divided into two similarly ruled halves. In the left are recorded the additions to the cash of the firm whose account we are preparing, and in the right half the withdrawals. The entries which refer to the events of three days may be explained by saying that you commenced the period with a balance of £35. On the same day goods to the value of £20 were sold for cash and on 15th November L. Wright paid you £5. Thus, the balance and the total receipts for this short period were £60. To the right we see that on the 14th, expenses of £1 10s. were paid, and purchases of goods for cash, £6, were effected. Two days later machinery costing £30 was paid for and an amount of £5 10s. was paid to a person named M. Hill—a total expenditure of, or reduction of cash by, £43. If, from receipts of £60, we deduct payments of £43 there is a balance of £17 which sum can be verified by counting the notes and coin in hand.

Glancing again at the entries, the logical reader will argue that the item of sales on 14th November, £20, refers to another form of property—goods or stock—which has been disposed of, and that the fact of this sale should also be recorded if we are to be consistent. The argument is a sound one and the following entry is therefore made in another account on the right or "disposal" side—

SALES ACCOUNT

Dr. *Cr.*

							£	*s.*	*d.*
					1935 Nov. 14	By Cash . .	20	–	–

Similarly, the argument could be applied to the items of purchase of goods £6, and of machinery £30, and since property is acquired in each of these cases we should expect to find entries for them as below—

PURCHASES ACCOUNT

Dr. *Cr.*

		£	*s.*	*d.*					
1935 Nov. 14	To Cash . .	6	–	–					

MACHINERY ACCOUNT

Dr.									Cr.
1935 Nov. 16	To Cash . .	£ 30	s. –	d. –					

The reasons for separating sales data from purchases are that unnecessary confusion is avoided and that the prices in the first case are selling prices but in the latter cost. Were details of sales and purchases collected in one account, the differences normally existing between the price levels would involve a further question of profit or loss. The answer to the problems of whether profit or loss has been made depends not only on our postulated facts as to purchase and sales but on the existence of stock and its value on the first and last of the three days. At this juncture we need not introduce fresh facts beyond saying that another account will be necessary, if we are to ascertain the resulting gross profit or loss.

The same line of reasoning may be applied in the case of the sundry expenses. Cash has been parted with but the firm whose transactions we are recording has received something in its stead. If the expense was in respect of carriage or cleaning the firm has been rendered a service; whereas, if the money was spent on packing materials which have been used, these materials were acquired before being used. It is logical, therefore, to open an account for expenses and make an entry as below.

EXPENSES ACCOUNT

Dr.									Cr.
1935 Nov. 14	To Cash . .	£ 1	s. 10	d. –					

The observant reader will have noted that the entries made in the four preceding accounts were placed on the *opposite* side to that on which the appropriate item appeared in the Cash Account.

The remaining outstanding items recorded in the Cash Account are the receipt from L. Wright of £5 and the payment to M. Hill of £5 10s. It will be appreciated that in recording the receipt of cash we have, so far, omitted any reference to our relations with the two persons concerned. In the case of Wright our receipt of money from him makes him our *creditor* and if we open an account for Wright and retain the principle of making an entry on the opposite side it would appear as follows—

L. WRIGHT

Dr.									Cr.
					1935 Nov. 15	By Cash . .	£ 5	s. –	d. –

Conversely the account of M. Hill must show that he owes us the £5 10s. paid to him on 16th November, or in other words he is our *debtor* and the most logical entry to make would be as below—

M. Hill

Dr. *Cr.*

		£	s.	d.					
1935 Nov. 16	To Cash . .	5	10	–					

The placing of the last two entries on the sides shown can be further justified when we remember L. Wright disposed of the cash acquired by us and that M. Hill acquired the money we paid out. To differentiate between our creditors and debtors and to facilitate reference to them it is usual to label the two sides of an account. M. Hill is a debtor: the balance in his account is on the left side which is termed the debtor or debit side. L. Wright, on the other hand, is a creditor: the balance in his account is on the right side which we call the creditor or credit side. It is now possible to summarize the foregoing remarks and to state the logical rules to be followed in making entries in accounts.

Accounts of	*Debit*	*Credit*
1. Assets or Property (Real a/cs).	Amounts received.	Amounts or value disposed of.
2. People and Firms. (Personal a/cs).	Amounts or values received by them.	Amounts disposed of or sent by them.
3. Expenses, Losses or Profits. (Nominal a/cs).	Expenses and Losses.	Profits.

Reference has been made above to the fact that each transaction was recorded twice—once on the debit side and once on the credit side. The application of this principle of Double Entry is a visible proof of the fact that in every transaction requiring to be recorded, two factors are involved and each must be set out in the accounts. The principle does not require that the bookkeeper must make a debit for every single credit entry or vice versa. There has been no exception to the principle if one debit is made for a group of credit items or one credit made for a group of two or more debits provided that the aggregate value of the group is equal to the value of the one entry made. It follows that the record of any transaction is incomplete if an entry has been made on only one side of an account. In view of the extreme importance of the principle of Double Entry and its applications it is proposed to illustrate the recording of transactions differing

from those already treated. The events to be recorded in our books are as under—

(*a*) Nov. 16th. A sale of goods on credit to F. Lloyd for £20.
(*b*) Nov. 18th. A purchase of goods on credit, valued at £18, from E. Charters.
(*c*) Nov. 20th. A cash receipt from Lloyd of £15.
(*d*) Nov. 23rd. A cash payment to Charters of £12.

By mental arithmetic the student will decide that, assuming no previous debts or cash in hand, when these transactions have taken place there should be a cash balance of £3; that Charters is owed £6 and Lloyd owes £5. The records made in the Cash and Ledger Accounts should confirm these facts.

Transaction (*a*) involves the disposal of goods and, since they are not paid for, the creation of a debtor for the same amount. The second transaction (*b*) is in direct contrast since it involves the acquisition of an asset and the creation of a creditor.

The third and fourth transactions are the acquisition of cash tending to diminish a debt due to us and the payment of cash which discharges part of our obligation to a creditor.

Dr. SALES ACCOUNT *Cr.*

		£	*s.*	*d.*			£	*s.*	*d.*
					Nov. 16	By F. Lloyd .	20	–	–

Dr. F. LLOYD *Cr.*

		£	*s.*	*d*			£	*s.*	*d.*
Nov. 16	To Goods .	20	–	–	Nov. 20	By Cash . .	15	–	–
					20	,, Balance .	5	–	–
		£20	–	–			£20	–	–
Nov. 21	To Balance .	5	–	–					

Dr. PURCHASES ACCOUNT *Cr.*

		£	*s.*	*d.*					
Nov. 18	To E. Charters.	18	–	–					

Dr. E. CHARTERS *Cr.*

		£	*s.*	*d.*			£	*s.*	*d.*
Nov. 23	To Cash . .	12	–	–	Nov. 18	By Goods .	18	–	–
23	,, Balance .	6	–	–					
		£18	–	–			£18	–	–
					Nov. 24	By Balance .	6	–	–

CASH ACCOUNT

Dr. *Cr.*

		£	s.	d.			£	s.	d.
Nov. 20	To F. Lloyd .	15	–	–	Nov. 23	By E. Charters	12	–	–
					23	„ Balance .	3	–	–
		£15	–	–			£15	–	–
Nov. 24	To Balance .	3	–	–					

The process of "balancing" carried out in the two personal accounts is but the deduction of the smaller side of the account from the greater and the insertion of the difference on the smaller side to make both totals equal. It will be seen that for the debit entry of £6 in Charters's account, a credit entry of £6 is also made in the same account because Charters is still a creditor. The balance in this case is termed a credit balance since the entry on that side was the greater. Similarly, the balance in Lloyd's account is a debit one, as a part payment of £15 by him in respect of a debt for £20 still leaves him a debtor for £5 which is shown by an entry for that amount on the debit side. It should be noted that the entries for sales and purchases on credit terms are made on the same side of respective accounts as in the case of the records for cash sales and cash purchases. A firm might care to record its cash sales in one account and its credit sales in another, but the entries in both cases would be made on the credit side of the appropriate account.

QUESTIONS

1. Copy out the following, and, in the columns provided, state: (1) the name of the account, and (2) the side of the account to which each of the items would be posted—

	Name of the Account	*Dr.* or *Cr.* Side.
(*a*) The total of the Returns Outwards Book		
(*b*) The total of the discount column on the debit side of the Cash Book		
(*c*) A payment in the Cash Book for goods purchased on credit . .		
(*d*) An amount, in the Cash Book received for the sale of freehold property		

R.S.A.

2. G. and H. Palmer are in partnership, sharing profits and losses as 2 : 1. In their books you find the following account—

CURRENT ACCOUNT—H. PALMER

Dr. *Cr.*

1933		£	1933		£
Mar. 31	To Bank . .	50	Jan. 1	By Balance .	75
June 30	,, ,, . .	50	Dec. 31	,, Profit & Loss A/c . .	320
Sept. 30	,, ,, . .	50			
Dec. 31	,, ,, . .	50			
,, 31	,, Balance c/d .	195			
		£395			£395
			1934		
			Jan. 1	By Balance b/d .	195

Explain concisely what is meant by each of the entries in the above account.

R.S.A.

3. (*a*) Assuming that a set of books has been correctly written up to date, what is the meaning of the following balances?

		£
(1) Bad Debts	*Dr.*	35
(2) Discounts and Allowances	*Dr.*	72
(3) Bank	*Cr.*	150

(*b*) Upon which side of the trial balance would you look for information upon each of the following items?

(1) Amount placed on Deposit with the Bank.
(2) Amount reserved for Bad and Doubtful Debts.
(3) Amount of Bills Payable outstanding.

London Chamber of Commerce.

4. P. STEWART

Dr. *Cr.*

1935		£	1935		£
Jan. 1	To Goods . .	60	Dec. 31	By Bank (first and final dividend) .	10
				,, Bad Debts A/c	50
		£60			£60
			1936		
			Apr. 1	By Cash . .	5

What conclusions would you draw from the above account of one of your customers?

5. Explain what is meant by each of the entries given in the account below—

J. MARTIN & SONS

Dr.					*Cr.*
1932		£	1932		£
Feb. 21	To Returns . .	20	Feb. 1	By Balance .	160
,, 29	,, Bank . .	156	,, 18	,, Goods . .	170
,, 29	,, Discount .	4			
,, 29	,, Balance . .	150			
		£330			£330

R.S.A.

6. J. HODGE

Dr.									*Cr.*
1935		£	*s.*	*d.*	1935		£	*s.*	*d.*
June 3	To Goods .	64	–	–	July 30	By Cash .	61	15	–
					,, 30	,, Discount .	2	5	–
		£64	–	–			£64	–	–

If your terms are 2½ per cent cash discount for payments made within one month, what conclusions would you draw from the above account in your Sales Ledger? If, in your opinion, an error has been made, what further entries would you make?

7. In what Ledger or other accounts, and upon which side of such accounts, would you expect to find the following?

(*a*) £500 paid for new machinery.

(*b*) £170 received from J. Robinson in full settlement of his account of £172 12s. 6d.

(*c*) £600 received from an insurance company in settlement of a claim for damages to premises by fire.

(*d*) £75 received for the sale of an old motor van.

(*e*) £250 paid to J. Fitter in full settlement of an account due to him three months hence of £260 15s.

R.S.A.

8. William Shaw appears in your books as a debtor for £46 16s. On his becoming bankrupt you receive a cheque for a first and final dividend of 12s. 6d. in the £. Give the entries you would make to record this in your Cash Book, Journal, and Ledger.

R.S.A.

9. In 1932 a trader, X, wrote off as a bad debt £19 15s. 4d. the balance of an account due to him by Y.

In 1933 Y paid the debt in full. Show by means of journal entries how the recovery of this debt would be dealt with in closing X's books for 1933, on the assumption that—

(*a*) the cash received was posted to the credit of Y's account.

(*b*) the cash was posted to a nominal account.

R.S.A.

10. In which accounts of the Ledger of John Mensing, a timber merchant, and on which side of such accounts would you expect to find the following transactions?

(*a*) Bought on credit from the L.T. Engineering Co. a gas engine, value £64.

(*b*) £100 lent to G. Phillips at 5 per cent per annum.

(*c*) A Credit Note for £8 sent to A. Woodman.

(*d*) £15 paid by cheque by J. Mensing for repairs to his private house.

R.S.A.

CHAPTER 3

THE CASH BOOK

HITHERTO the Cash Account has been treated as a normal Ledger Account and no distinction has been drawn between cash and bank transactions. The following typical transactions will be recorded in a three-column Cash Book to illustrate their treatment—

1935

Jan. 1st. £300 paid in by the proprietor, C. Roberts, on commencing business. Of this £200 was banked and £100 was put into the office cash box.

Jan. 2nd. An amount of £37 10s. due to W. Jones for goods purchased on credit was settled by cheque, after deducting 7½ per cent cash discount.

Jan. 3rd. Bought goods £37 10s. less trade discount 7½ per cent and paid cash for them.

Jan. 4th. Cash sales £40, of which £30 was banked. R. Smith who owed £80 on an invoice subject to 10 per cent trade discount and 5 per cent cash discount, settled his account by cheque.

Jan. 5th. Drew and cashed cheque for £25 and paid wages of that amount. Paid, from office cash, butcher's bill (private expense) £2 2s. 8d. and £19 for an office safe.

R.S.A.

The functions of the six columns in the following cash book are as follows—

Col. 1. For cash discounts allowed to Roberts' debtors.
Col. 2. For amounts received by Roberts and placed in his office cash box.
Col. 3. For amounts placed by Roberts in his current account at the bank.
Col. 4. For cash discount allowed by Roberts' creditors.
Col. 5. For amounts withdrawn from the office cash box.
Col. 6. For cheques drawn by Roberts on his current account.

The entry in column 1, for discount allowed to R. Smith, would be added to other similar entries, and the total amount would be debited to a Discount Allowed Account. A credit for £3 12s. in Smith's account completes the necessary double entry. Similarly, the total of column 4 is posted to the credit of the Discount Received Account and the items making the total are debited to the respective accounts of the creditors concerned. The student should note that though discount is involved in the transactions which took place on the 3rd and 4th January only the net amounts paid to or received by Roberts are entered in the Cash Book.

All the entries made in columns 2 and 3 are debits and must be

Dr. *Cr.*

		Col. 1			Col. 2			Col. 3					Col. 4			Col. 5			Col. 6		
1935		£	s.	d.	£	s.	d.	£	s.	d.	1935		£	s.	d.	£	s.	d.	£	s.	d.
Jan. 1	To Capital A/c .				100			200	–	–	Jan. 2	By W. Jones .	2	16	3				34	13	9
4	,, Sales A/c .				40	–	–				3	,, Purchases A/c				34	13	9			
4	,, Office C.							30	–	–	4	,, Bank . C.				30	–	–			
4	,, R. Smith .	3	12	–				68	8	–	5	,, Office . C.							25	–	–
5	,, Bank . C.				25	–	–				5	,, Wages A/c .				25	–	–			
											5	,, Current A/c . (C. Roberts)				6	2	8			
											5	,, Office Fittings A/c .				19	–	–			
											5	,, Balances c/d .				50	3	7	238	14	3
		£3	12	–	£165	–	–	£298	8	–			£2	16	3	£165	–	–	£298	8	–
Jan. 5	To Balances b/d .				50	3	7	238	14	3											

balanced by credit entries, either in the Cash Book itself or in Ledger Accounts. Thus, for example, the £30 banked on 4th January is balanced by a credit for an equal amount in column 5. In contrast the sum of £25 drawn from the bank on 5th January (column 6) is balanced by the debit entry in the second column. These entries are distinguished by "C" to show that a contra or opposite entry has been made in the same account. The £40 received in respect of cash sales would be posted to the credit of the Sales Account.

The credit entry for purchases, £34 13s. 9d., would be posted to the debit of the Purchases Account; the £6 2s. 8d. paid to the butcher to the debit of Roberts's Current or Drawings Account while the money spent on an office safe would be debited in the Office Fittings Account. In the same way £34 13s. 9d. would be debited to W. Jones's account.

Finally, the amounts in column 2 are balanced with those in column 5 and the excess of receipts over expenditure, i.e. the balance of cash in hand, is brought down. A similar calculation with the items in the third and sixth columns shows a balance on current account at the bank of £238 14s. 3d. It should be noted that, while it is impossible to take from the office cash box more than it contains, it may be possible to draw a cheque, which will be honoured, for a sum greater than that standing at the bank. Thus, suppose Roberts drew a cheque for £250 and this was entered in the sixth column a credit balance of £11 5s. 9d. would result. The bank has, in this case become a creditor of Roberts for the sum by which he has overdrawn his account—he has an overdraft.

QUESTIONS

1. The account of A. Buyer in the books of Wholesalers Limited showed a debit balance of £15 9s. 3d. on 1st January, 1933. The following transactions subsequently took place—

(*a*) On 10th January Buyer purchased goods (on credit) to the value of £40.

(*b*) On 13th January he returned £5 of them as not up to sample and was given credit for the same.

(*c*) On 5th February he forwarded a cheque in settlement of his account, deducting 5 per cent discount in respect of the January purchase for settlement in one month.

(*d*) On 18th May he paid a deposit of £100 on account of future purchases, in consideration of which he was to receive a discount of 10 per cent on gross purchases covered by this amount.

(*e*) On 23rd June he ordered goods to the (gross) value of £40, on 17th August goods to the value of £50, and on 29th August to the value of £60.

(*f*) In November Buyer was adjudicated bankrupt, and the statement of affairs showed that the creditors would probably receive 5s. in

the £. When closing their books at the end of December, Wholesalers Limited wrote the expected loss off the account.

(*g*) On 1st February, 1934, a cheque for £10 5s. 6d. was received from the trustee in bankruptcy in final settlement.

You are required to write up Buyer's account in the books of Wholesalers Limited.

R.S.A.

2. Record the following in a three-column Cash Book—

1932

Dec. 31. Cash in Hand, £93 4s. 10d.
Cash at Bank, £1,486 9s. 2d.

1933

Jan. 2. Notice was received from the bank that a cheque for £24 7s. 6d., received from A. Blake and paid into the bank on 31st December, 1932, had been returned marked "no account."

Jan. 3. £56 of the cash in hand was banked.

Jan. 4. A cheque for £30 was drawn for office cash.
£59 8s. 10d. Wages was paid from cash.

Jan. 5. A cheque for £95 was received from H. Wilson and paid to bank. He had deducted 5 per cent cash discount which was allowed.

Balance the Cash Book as on 5th January and bring down the balances. No posting to the Ledger is required.

R.S.A.

CHAPTER 4

CAPITAL

THUS far we have been concerned with the transactions of individuals already carrying on business, and the commencement of a commercial enterprise must now be considered. Apart from owned or rented premises in which to operate, money or credit is obviously essential in order that fittings, stock, etc., may be obtained and current operating expenses paid. Such money or credit is termed Capital and it is apparent that this must be supplied from the proprietor's own resources or borrowed by him from some external source. Thus the capital of a concern, be it large or small, is composed of the owner's personal investment or of loans made to it or it may be made up by amounts from both of these sources. It need hardly be pointed out that borrowing capital increases the concern's operating charges since the expense of interest is incurred.

Assume that D. Francis, junior, has been lent £500 by his father, D. P. Francis, to start a business on 1st February on the understanding that adequate accounts are kept. The son would be wise to open a current account in a bank in which a large part, say £450, would be placed. To record what has already taken place the following entries would be made—

CASH BOOK

Dr. *Cr.*

		£	s.	d.	£	s.	d.			£	s.	d.	£	s.	d.
Feb. 1	To Loan A/c	500						Feb. 1	By Bank .	450	–	–			
„ 1	„ Cash .				450	–	–	„ 1	„ Balances	50		–	450		-
	£	500	–		450		–		£	500		–	450	-	–
Feb. 2	To Balances	50	–	–	450	-	–								

LOAN ACCOUNT (D. P. FRANCIS)

Dr. *Cr.*

							£	s.	d.
					Feb. 1	By Cash . .	500	–	–

Thus the capital borrowed from the father will appear in the books of the son's business as a credit balance in the Loan Account until such time as it is repaid; and the sum outstanding at any time will be a liability. The recording of any interest,

which a hard-hearted father may have demanded, would be effected in a separate nominal account. A simple Balance Sheet of the son's business at this stage would read—

Liabilities	£	*s.*	*d.*	*Assets*	£	*s.*	*d.*
Loan A/c . .	500	–	–	Cash . .	50	–	–
				Bank . .	450	–	–
	£500	–	–		£500	–	–

We may now turn to the recording of capital in cases where it has not been borrowed but is owned by the proprietor himself. Before we proceed to this task we must remember one important fact and a corollary. This fact is that a proprietor and his business are not one and the same. Stated in this bald manner there would appear to be no difficulty in accepting this statement; yet whenever accounts are mentioned students appear to forget it. A man may keep private accounts to show his personal investments, his private income and the expenditure on his own recreations, food, and shelter. If this individual keeps the accounts of his business he is concerned with the assets and liabilities, income and expenditure of the business. There are, in this instance, two sets of accounts for two separate entities, which should be distinct. Thus when a person takes, say, £500 from his own private resources for investment in a business he is in a similar position to the father in our illustration. As a proprietor he is a creditor of the concern and the account in the books of the business in which this fact is recorded is virtually the proprietor's personal account.

The account would appear as under—

CAPITAL ACCOUNT

Dr.					*Cr.* £
			Feb. 1	By Cash . .	500

A Balance Sheet extracted at that date would read—

Liabilities	£	*Assets*	£
Capital A/c	500	Cash	50
		Bank	450
	£500		£500

A more complicated illustration may now be taken. Assume that K. Parker possesses stock valued at £200 of which sum, £50 is still owing, a van worth £150, and a cash balance of £100. The assets, which Parker considers are those of the business, amount in all to the value of £450. Of this sum £50 is owing to the creditors who supplied the stock and the remainder belongs to K. Parker, so that the capital in this illustration amounts to £400. The Balance Sheet of K. Parker at this date is as under—

Liabilities	£	*Assets*	£
Creditors	50	Cash	100
Capital A/c	400	Stock	200
		Motor Van	150
	£450		£450

In each of these three cases it will be seen that, if from the total value of a firm's assets are deducted the liabilities of the concern, the resultant figure is the capital. Capital is thus the value of the claim of the proprietor to the assets of the business he owns. If we drew up a Balance Sheet of K. Parker's business as it was a year later than that given we would expect asset values to have changed; new assets acquired and fresh liabilities incurred. Assume that such a Balance Sheet reads—

Liabilities	£	*Assets*	£
Creditors	300	Cash	120
Capital A/c	600	Bank	280
		Motor Van	120
		Stock	380
	£900		£900

The assets have been doubled but the effect on capital of this increase of £450 has been nullified in part since the creditors have also increased by £250. There has been, therefore, a net increase of £200 which is the amount by which the capital or proprietor's share has been augmented. Where a person's share of the world's goods has increased, we say that his capital has increased, or, in other words, that he has made a profit. Conversely, when a firm's assets fall in value the business is losing ground, and its capital diminishes unless there has been a corresponding fall in its liabilities. In the above illustration it has been tacitly assumed

that Parker throughout has drawn neither money nor goods from the business, nor has he invested fresh capital.

Suppose that of the final bank balance of £280 Parker had drawn a further £200 from his private resources. This sum, debited to his Bank Account and credited to his Capital, would account for the increase; in which case we are not justified in saying the business has earned a profit. Alternatively, imagine that Parker had, during the period, withdrawn £50 from the bank for personal expenses. Had this sum remained in the business the assets would total £950 and the capital account £650, or a £250 increase or profit on the first figure.

In recording his withdrawals of cash and goods from the firm's assets Parker has the option of debiting his Capital Account or of opening a Drawings Account and placing the values on the same side. If he adopts the latter course, on the assumption of drawings of £150 against profits of say, £200 then the Drawings or Current Account would be—

DRAWINGS ACCOUNT

Dr.		£	*s.*	*d.*			£	*s.*	*d.* *Cr.*
Apr. 30	To Bank .	50	–	–	Dec. 31	By Net Profit	200	–	–
Aug. 31	,, ,, .	50	–	–					
Dec. 31	,, ,, .	50	–	–					
,, 31	,, Balance .	50	–	–					
		£200	–	–			£200	–	–
					Jan. 1	By Balance .	50	–	–

The liabilities side of Parker's Balance Sheet could then be stated as follows—

Creditors		£300
Capital Account		400
Current Account Balance . . .	£200	
Less Drawings	150	
		50
		£750

The assets would be the same with the exception of the bank balance which would drop from £280 to £130—the amount of the drawings. It must not be forgotten that the recording of the proprietor's profit in a separate account does not alter the fact that the balance of the Current or Drawings Account is a further liability of the concern to its owner.

We may now consider the position of a trader who, after an unsuccessful period, has withdrawn from his business an amount equivalent to what he invested. The Balance Sheet of such a concern might read—

Liabilities		*Assets*	
	£		£
Creditors	540	Cash	40
		Stock	300
		Fittings	200
	£540		£540

It will be apparent that if the claims of the creditors are to be satisfied in full they are entitled to a sum of money equal to the total value of the assets. If, therefore, the proprietor withdraws the cash balance he is, in effect, taking money to which the creditors have a prior and just claim. The extraction of this money diminishes the assets and not the obligations to creditors so that the owner owes £40 to the business and its creditors. His Balance Sheet, since he has become a debtor to his own firm, should read—

Liabilities		*Assets*	
	£		£
Creditors	540	Stock	300
		Fittings	200
		Capital A/c (*Dr.* Balance) .	40
	£540		£540

Since continued failure to operate successfully in business must finally result in the partial or total loss of capital, i.e. bankruptcy or, in the case of limited companies, liquidation, we would expect to find illuminating facts in such reports as deal with these matters. The latest available report on bankruptcy is the 52nd General Annual Report issued by the Board of Trade for 1934. In this report it is stated that in 1273 cases the bankrupt's assets were not of a value equal to 10s. in the pound on the amount of the unsecured liabilities; which number excludes cases in which the deficiency was not due to circumstances for which the bankrupt could be held justly responsible. Again, in 736 instances it was shown that the bankrupt had continued to trade after knowing himself to be insolvent. In 716 cases the bankrupt omitted to keep such books of accounts as were usual

and proper in the business carried on by him. Further, in this last section such books as were kept did not sufficiently disclose the business transactions and the financial position of the bankrupt within the three years immediately preceding his bankruptcy. Lastly, in 216 instances it was found that bankrupts had contracted debts provable in the bankruptcy without having at the time of contracting them any reasonable or probable ground of expectation of being able to pay.

In a consideration of these unpleasant facts two main conclusions would appear to emerge. Firstly, that in a large number of cases the bankrupt could be held responsible, in part at any rate, for his unfortunate financial position. It is true that in many cases external business conditions may have been a contributing factor to his failure but it is equally true that internal factors influenced in no small degree the final result. Secondly, that apart from the individual character of the person concerned the assistance that should have been available to him from logical and well-kept accounts was not forthcoming. Speculation and extravagance might be condoned but neglect of affairs and the recording of them is inexcusable. It is, therefore, hardly remarkable to note that the total liabilities of eight bankrupt accountants were under £2500 whereas the total liabilities of 392 bankrupt builders exceeded £1,250,000.

QUESTIONS

1. It has been stated that the accountant and his like are being developed administratively at a much greater pace than is the technologist. What, in your opinion, are the justifications for this development?

2. During 1934 there were 257 cases in which bankruptcy was brought on or contributed to by rash and hazardous speculations, or by unjustifiable extravagance in living, or by gambling, or by culpable neglect of business affairs. Discuss this statement.

3. The number of bankruptcies in 1934 in each of the following types of business exceeded 100: drapers and haberdashers, tobacconists, wireless dealers, and decorators. Can you offer any explanation of this fact?

4. In 1934 the total liabilities of 103 directors and promoters adjudicated bankrupts exceeded £500,000 and the liabilities of 212 bankrupt milliners and dressmakers were in excess of £369,000. What conclusions do you draw from these figures?

5. "Nothing can arrest mechanized accounting, for it is the only logical answer to the requirements of modern industry." Discuss this quotation.

CHAPTER 5

SUBSIDIARY BOOKS AND DEPARTMENTAL ACCOUNTS

SUBSIDIARY BOOKS

If the entries made in the Ledger Accounts are to be easily recorded and yet capable of comprehension, only essential information must find its way into the accounts. As has been seen, the data necessary in the Ledger comprise the date of the transaction, its general characteristics, the value involved and a folio reference for the purpose of checking Double Entry. Essential though these facts are for the purposes of record the further facts relating to sizes, unit prices, colours, departmental operations, etc., are of equal importance in the day-to-day conduct of business. The necessity for subsidiary books to contain this information arises, and in addition to becoming storehouses of useful data they serve a second purpose in that the collected information can be analysed and the number of Ledger entries minimized. To illustrate these functions assume the following transactions require to be recorded—

Nov. 19th. Sold on credit to R. R. Milner:
36 yds. of Calico @ 6d. per yard.
60 yds. of Art. Silk @ 2s. per yard.
12 yds. of Dress Material @ 3s. 6d. per yard.

Nov. 20th. Sold on credit to B. B. Turner:
72 yds. Muslin @ 8d. per yard.
30 yds. Art. Silk @ 2s. 6d. per yard.
30 yds. Coatings @ 4s. 6d. per yard.

These transactions might be entered in the Sales Book or Sales Journal as shown on page 26.

It will be obvious that by recording a firm's credit sales in the above manner it is possible to know at a glance the total sales of each commodity and the aggregate sales. The fact that the sum of £3 6s., £9 15s. and £8 17s. equals the aggregate is an additional mathematical check. In transferring this information to the Ledger £9 would be debited to the account of R. R. Milner and £12 18s. to B. B. Turner's account. A single credit of £21 18s. could be made in the Sales Account, or if Sales Accounts for each commodity were kept, then £3 6s. would be credited to that for Cotton, £9 15s. to the Art. Silk Account and £8 17s. to the Woollen Account. If either of these alternatives is adopted the amount

SALES BOOK

			Cotton	Art. Silk	Wool
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Nov. 19.					
R. R. Milner:					
36 yds. Calico @ 6d. per yd. . .	18 –		18 –		
60 yds. Art. Silk @ 2s. per yd. . .	6 – –			6 – –	
12 yds. Dress Material @ 3s. 6d. per yd.	2 2 –				2 2 –
		9 – –			
Nov. 20.					
B. B. Turner:					
72 yds. Muslin @ 8d. per yd . .	2 8 –		2 8 –		
30 yds. Art. Silk @ 2s. 6d. per yd. .	3 15 –			3 15 –	
30 yds. Coatings @ 4s. 6d. per yd. .	6 15 –				6 15 –
		12 18 –			
Cr. Sales A/c .	£	21 18 £	£3 6 –	£9 15 –	£8 17 –

credited is the same and the number of entries is considerably less than if the six debits and six credits were made in respect of the six given sales.

The same procedure and the same analysis would be adopted to record any goods returned by debtors, i.e. Returns Inwards, save that the returns would be credited to the personal accounts concerned and debited to the Returns Inwards Account. A firm's total credit purchases collected in a similar way would be debited to a Purchases Account and the individual items credited to the relative personal accounts.

Selling prices are frequently stated as being subject to the deduction of trade discount. The trade discount acts as a device for regulating the prices which will, in their turn, be diminished by the deduction of cash discount when payment is made. For example, an article, if catalogued at £10, subject to a trade discount of 25 per cent, will be invoiced to a purchaser at £7 10s. Were the buyer entitled to deduct a cash discount of 5 per cent he would actually pay £7 10s. less 7s. 6d. or £7 2s. 6d. Since the debt of the buyer is £7 10s. there is no need to record the trade discount in his Ledger Account and reference to it is confined to the subsidiary books concerned. If for any reason the purchaser returned the article to the seller he would not expect to be credited with £10; in other words, goods sold less a trade discount

must be taken into stock again subject to the same percentage deduction.

These subsidiary books are of a statistical character, and, as such, are the main sources of the concern's internal business statistics with the help of which its management is called upon to make important decisions as to policy. Stock control in a business of any size cannot be effective unless the records of stocks on hand at the beginning of a period, subsequent purchases and sales can be brought together in such a way as to give the necessary information. The information contained in the Sales Journal if analysed by commodity, department or area is capable of giving the sales manager invaluable assistance. By extracting such data and correlating them with the firm's advertising expenditure and travellers' districts, some indication of the value and efficiency of the advertising and travellers can be obtained. It will be evident that if the maximum benefit is to be forthcoming from information of this character, then in designing the subsidiary books the distant aim must be constantly borne in mind. The attention of students is directed to the section dealing with the mechanization of accounts, for one of the advantages of book-keeping machinery is its ability to deal rapidly and in detail with such analysis as is deemed necessary.

DEPARTMENTAL ACCOUNTS

If a business man is buying and subsequently selling one commodity only, then his records will show the profit or loss resulting from his operations in respect of this commodity. No outstanding difficulty arises in his calculations since his expenses are incurred in relation to the one article. As soon as a second kind of commodity is bought and sold, the question arises whether profits and losses are to be analysed as between the two commodities or to be considered as one amount. A similar problem arises when a business is departmentalized, for expenses may be regarded as expenses of the business as a unit or as appropriate in whole or in part to a particular department.

The desire for an analysis of results by commodity or by department is a desire for fuller information in the hope that by methods of comparison an assessment of relative efficiency and success or failure may be made. Thus, if a concern of two departments shows, as a unit, a net profit there is practically no limit to the departmental figures which are capable of giving this result. We may group the three main types of possible results as follows—

(*a*) Net Profit in Dept. A plus Net Profit in Dept. B.
(*b*) Net Profit in Dept. A less Net Loss in Dept. B.
(*c*) Net Profit in Dept. B less Net Loss in Dept. A.

If a net profit is made in each department then their relative magnitude is of real importance when questions of departmental policies come up for revision or formation. If the result falls into either of the last two types, then the presence of a net loss calls for immediate action. This is particularly true since as the net loss figure increases the net profit must increase also; in other words the relative efficiencies of the departments will vary inversely. As the number of departments grows, the position becomes increasingly complex and departmental analysis is seen to be imperative rather than optional.

Retaining our illustration of the two-department retail business, we see that the stocks, purchases, and sales of one department can be separated from those of the other. Two separate sets of records or one set of books containing columns for purposes of analysis make this possible. The remuneration paid to the buyer and the salaries of employees, whose work is confined solely to one department, offer no difficulty since they are rightly charged in whole to the appropriate department concerned. This principle can be applied with justice to any other direct expenses —that is expenses incurred for and by one department to the exclusion of the others and the business as a whole. It should be noted in passing that a department may be a useful one if the gross profit earned is sufficient to cover direct expenses. Expenses such as rent, non-merchandise insurance, rates, lighting, etc., would be stated as amounts for the whole business and would have to be divided between the two departments. The division of expenditure between the departments is made possible by the adoption of bases such as the superficial area of departments, number of lamps in each department, etc. Thus, if the first department covered an area of 3000 square feet and the second 5000 square feet, the total rent charge might be shared in the ratio of 3 to 5. Or, if the number of lamps in the first department was 4 and in the second 6, then the sharing of lighting expenditure could be made in the ratio of 4 to 6. Stated thus the problem of pro-rating does not appear to present exceptional difficulty. If, however, a large retailing unit of several storeys is considered, the relative importance of the ground floor and the first or second floors must be assessed. Is this possible? It may be argued that all bases of distribution rest, in the final analysis, on estimates and are, therefore, unreliable. So long as there is doubt in the division of expenditure there must be uncertainty which may ultimately lead to the mis-interpretation of departmental results.

Another basis of pro-rating expenditure, as between products and departments, has been developed both in this country and

in the United States. This system rests on the division of all indirect expenses into two groups: escapable and inescapable expenses. Escapable expenses are those which would not be incurred if the department were eliminated and ceased to function. By contrast inescapable expenses are those which will have to be met even if the department is eliminated. Thus, if all the departments are under one roof, then the elimination of one department does not cause a fall in the expense of rent, which is, therefore, classed as inescapable. Only escapable expenses are regarded as the costs of management to remain undivided and to be charged against the general profits of the business. The student will appreciate that in this method, as in others, some measure of compromise does not invalidate the value of the results obtained, but its presence should increase the thoughtfulness and care with which the final figures are reviewed.

QUESTIONS

1. Apart from its office, a firm is composed of three departments. Give concisely the recommendations you would make with respect to its accounting methods.

What arguments would you adduce in support of the recommendations made in answer to the preceding question?

2. State clearly the advantages which accrue from the use of analytical subsidiary books.

3. A trader wishes to ascertain separately the gross profit earned by each of the two departments which comprise his business. Show how the columnar system of book-keeping would allow him to do this without opening any additional books or accounts. Give any necessary rulings and explain how the system works.

R.S.A.

4. On 16th May, 1932, E. Short bought from G. Long 10 dozen pairs of blankets at 22s. 6d. per pair, subject to 10 per cent trade discount and 5 per cent discount for cash within fourteen days. On 18th May, E. Short returned 20 pairs of blankets and on 27th May sent a cheque to settle his account. Pass these transactions through the proper subsidiary books of E. Short, and show G. Long's account in the Ledger.

R.S.A.

5. D. Kettle & Co. are provision importers. They divide their business into three departments: (1) Butter and Eggs, (2) Poultry and Bacon, and (3) Tinned or Bottled Goods.

Rule a suitable Purchase Book and enter the following invoices therein—

Nov. 12th. M. Peterson. 50 cases of eggs @ 15s. per case; 30 cwt. of bacon @ 80s. per cwt. and 20 gross condensed Milk @ 36s. per gross.

Nov. 13th. A. Merrick. 20 gross of "Amber" peaches in syrup, at £9 per gross.

R.S.A.

CHAPTER 6

THE TRIAL BALANCE—SECTIONAL BALANCING

TRIAL BALANCE

THE importance of the principle of Double Entry has already been emphasized, in that its employment serves to show the dual nature of all transactions, and to ensure that both aspects of business events are recorded. An equally important result follows the division of all accounts into debit and credit sides, and the placing of equivalent amounts on each of these sides. Assume a set of Ledger Accounts with no entries in any of them. Business transactions take place, and all the appropriate entries are made accurately as to amounts, and correctly as to side. It follows, in this case, that there has been in aggregate value as much debited to these accounts as there has been credited. The total of all the debits must equal the total of all the credits assuming that all arithmetical calculations are accurately made. To obtain the total of the entries debited and credited the balances of the accounts are listed as shown below. This list of the debit and credit balances existing in the Ledger Accounts and Cash Book is termed a Trial Balance.

TRIAL BALANCE—31ST DECEMBER, 1935

	Dr.	*Cr.*
	£	£
Capital		7,000
Drawings	600	
Freehold Premises	3,300	
Stock (1st January, 1935)	1,000	
Debtors and Creditors	1,500	1,390
Purchases and Sales	6,427	8,700
Returns Inwards and Outwards	210	160
General Expenses	320	
Discount		50
Carriage on Purchases	308	
Manufacturing Wages	2,050	
Office Salaries	245	
Cash in Hand	30	
Cash at Bank	1,310	
	£17,300	£17,300

Certain inferences may be drawn from this Trial Balance. For example, it may be said that the Ledger Accounts of the

business showed the above balance at 31st December, 1935. This applies to the Stock Account, for as no entries have been made in it since the beginning of the year, it shows the same balance at 31st December. It should be noted that though a Trial Balance contains the balances of all the nominal accounts it does not show their cumulative effect. In these two respects it differs from a Balance Sheet which gives the balances existing in a set of books after the Profit and Loss Account has been closed. If a Trial Balance were extracted from a set of books immediately after the Revenue Account had been closed, then the first or debit column would contain the assets and the second or credit column the liabilities.

If one or more errors have been made when transactions were being recorded, then, assuming correct addition, the totals of debits and credits will not agree. The fact of such disagreement in the totals points to errors having been made. If, in posting the cash purchase of a refrigerator by a butcher, the debit were made in the Purchases Account and not, as it should be, in a Machinery Account, then the total of debits is not affected. An inspection of the Trial Balance fails to disclose this serious error of principle existing in the Ledger. What has been said of a misplaced debit entry is equally true in the case of a credit posted to the credit of a wrong account. Thus a credit purchase from A. Friar posted to the credit of W. Friar, a different person, does not affect the credit total of the Trial Balance.

Secondly, if all the entries relating to one or more transactions have been entirely omitted then the Trial Balance will not disclose a difference. This also assumes that the recorded entries have been correctly posted and no arithmetical errors made in addition or subtraction. Thus, the omission of items in the subsidiary books is not revealed in the Trial Balance nor are all the arithmetical errors made in the same subsidiary books. For example, if the £265 total of a page of the Sales Book is carried forward to the next page as £256 and finally transferred to the Sales Account as the lower figure, then the Sales Account and, therefore, the Trial Balance credit total will both be too small by £9. If, in the same or another book, in extending the price of six articles at £1 15s. 3d. each as £10 1s. 6d., the purchaser is debited with this sum and the Sales Account credited with the same amount the error will not be evident from an inspection of the Trial Balance.

Thirdly, there is the possibility that a number of mistakes made in the Ledger Accounts may have the joint effect of cancelling out each other. The effect of an excess debit of £1 would be neutralized, for example, by the excess crediting of two items by 10s. in each case.

Where errors have occurred and the Trial Balance totals differ it is possible to trace the mistakes by a series of simple calculations. Differences of £10, £100, or £1000 or multiples thereof are frequently the result of faulty addition.

SALES ACCOUNT

Dr.									*Cr.*
					Nov. 20	By Jackson .	£ 12	*s.* –	*d.* –

L. JACKSON

Dr.									*Cr.*
					Nov. 20	By Sales .	£ 12	*s.* –	*d.* –

In the case above when posting the sale in Jackson's account a second credit but no debit has been made. The Trial Balance will show a difference of £24, the credit side being in excess by twice the amount involved in the transaction. Had no entry been made in L. Jackson's account, then the difference would only be £12 or the amount of the transaction. The amount of the difference or half of it is frequently indication of the size of the error and should assist a searcher in tracing it.

Where any figures are reversed, say £12 above were debited to L. Jackson as £21 then the difference becomes a multiple of 9. The number of times 9 is contained in the difference must equal the excess of one reversed figure over the other. If 75 is reversed to become 57, the difference is 18 or 9 times 2, and the difference between 7 and 5 is 2. Thus 64, 75, 86, and 97 if reversed will give, in each case, a difference of 18.

The reader will appreciate that in dealing with the above errors only their isolated effect on the Trial Balance has been shown. In cases where a number of different types of error have been made the cumulative difference on the Trial Balance will not resemble the differences quoted above. The task of locating such errors falls to the lot of the auditor or accountant; and its magnitude and difficulty has been one reason for the introduction of systems of internal check and mechanized book-keeping.

To correct errors existing in Ledger Accounts we may refer to two previous illustrations. If a debit is wrongly made in a Purchases Account it can be corrected by making a credit for the amount in the same account. The omission from the Machinery Account can be corrected by inserting a debit equal to the above credit. It will be seen, therefore, that the correction of errors which have not affected the Trial Balance, is made by the application of Double Entry principles.

Where goods, valued at £12, were sold to L. Jackson and credited to his account, we saw that a difference of £24 arose in the Trial Balance, the credit total being the larger. To correct this type of error a Suspense Account is created and debited with the difference, thus making the Trial Balance agree. This Suspense Account could remain in the Ledger until the error was located. When found, £24 would be debited to L. Jackson's account and an equal sum credited to the Suspense Account as below—

L. JACKSON

Dr.									*Cr.*
		£	*s.*	*d.*			£	*s.*	*d.*
Dec. 31	To Suspense A/c .	24	–	–	Nov. 20	By Sales .	12	–	–
					Dec. 31	,, Balance .	12	–	–
		£24	–	–			£24	–	-
Jan. 1	To Balance .	12	–	–					

SUSPENSE ACCOUNT

Dr.									*Cr.*
		£	*s.*	*d.*			£	*s.*	*d.*
Dec. 31	To Balance .	24	–	–	Dec. 31	By L. Jackson	24	–	–

The result of the transfer of £24 to Jackson's account is to bring the balance of £12 to the debit side; and the Suspense Account having served its purpose shows no balance.

SECTIONAL BALANCING

Normally the number of accounts in the Debtors and Creditors Ledgers far outweighs the remaining nominal and real accounts; and further the number of entries made in the personal accounts is in excess of the remainder. So the risk of errors arising in the Sales and Purchases Ledgers is greater than in the General Ledger, and the recognition of this fact is seen in the device that enables Ledgers to be balanced in sections.

	Debit		Credit				
Debtor	(Bal. + Sales) 1st. Jan.	=	(Cash + Disct.	+ Bad Debts		+ B/R	+ Bal.)
	£ + £		£ + £			£	£
A .	180 + 200	=	175 + 7			100 +	98
B .	60 + 40	=	50	+	50		
C .	120 + 400	=	115 + 5			+ 200 +	200
D ,	100 + 100	=	50			+ 100 +	50
Totals .	460 + 740	=	(390 + 12	+	50	+ 400)+	348

In the above table the entries from four imaginary debtors' accounts are arranged in columnar form; the first two giving the balances owing at 1st January and the sales effected during the month respectively. The next four columns give the amounts paid and allowed in reduction of the amounts owing and the final column gives the balances owing by the debtors at the end of the month. We may say of any debtor that the balance owing by him at the beginning of a period plus his purchases equals the sum of cash received from him, discount allowed, bills receivable accepted, bad debts written off, and the balance outstanding at the end of the period. What is true for one debtor is equally true for several; for the whole is equal to the sum of all its parts. Thus, turning to the totals it is seen that

$$£460 + £740 = £390 + £12 + £50 + £400 + £348.$$

In other words if the above totals were expressed in account form by putting the total figures on the same sides as we would in a single account, we should have a debit balance of £348. But the sum of the individual balances of the several debtors' accounts, £98, £200, and £50, also equals £348.

The keeping of the separate accounts of the several debtors is necessary if a firm is to know the amounts owing to it by each individual. So to obtain an effective check we need only collect totals of the various types of entries. Such accounts are termed Control or Adjustment Accounts. This ability to check the accuracy of the debtors' accounts has been made possible by a manipulation of the data to be obtained, which are relevant to debtors. Creditors can be treated in the same manner, and the credit balance of an account which contains the totals of opening balances and purchases, cash paid, discount received, etc., should equal the sum of the balances in the several creditors' accounts. It will be seen, therefore, that the personal accounts can be checked in sections and that, if desired, the whole of the debtors' or creditors' accounts can be still further sectionalized. A firm which records its debtors' accounts in three ledgers can check each ledger independently of the other two. It follows, however, that if three "totals" or Adjustment Accounts are to be raised that the data relating to, say, Ledger No. 1 must be available separately from similar material which refers to Ledgers No. 2 and No. 3. The subsidiary books must be analysed along lines that will give the desired sectional information. Further, errors in analysis will result, until corrected, in a failure to verify the accuracy of the Ledger balances. Subsidiary book totals are transferred to the Adjustment Account while the amounts constituting the totals are taken to the appropriate personal accounts.

It will have been appreciated that the function of the Adjustment Account is to test the accuracy of a group of accounts without the employment of the remaining accounts of the business, which a Trial Balance necessitates. The Control or Adjustment Account is thus a memorandum account, and it may be argued that the entries made in it in the form of debits and credits do not require the recording of corresponding credits and debits elsewhere. Others may, however, insist on the principle of Double Entry being applied in this case as in all others. In this event two Adjustment Accounts are drawn up in respect of each Debtors or Sales Ledger: a Sales Ledger Adjustment Account is placed in the General Ledger, and in the Sales Ledger itself a General Ledger Adjustment Account. Similarly a General Ledger Adjustment Account is raised in each Creditors or Purchases Ledger and a Creditors Ledger Adjustment Account in the General Ledger.

The following account is raised in No. 1 Creditors Ledger to check the accuracy of the personal accounts in that Ledger.

GENERAL LEDGER ADJUSTMENT ACCOUNT
(In No. 1 Creditors Ledger)

Dr. *Cr.*

		£			£
Dec. 1	To Balance . .	1260	Dec. 15	By Cash . .	1910
,, 15	,, Purchases .	1590	,, 15	,, Discount .	80
			,, 15	,, Returns out	50
			,, 15	,, B/P . .	150
			,, 15	,, Balance c/d .	660
		£2850			£2850
Dec. 15	To Balance . .	660			

The opening balance of £1260 represents the total of the balances on 1st December of the creditors' accounts in No. 1 Ledger. Were these credit balances listed in Trial Balance form then by the insertion of the debit balance of an equivalent sum a self-contained Trial Balance is obtained. Similarly at 15th December, £660 should equal the sum of the balances in the creditors' accounts at that date. If the recording has been accurately carried out, then the No. 1 Creditors Ledger Adjustment Account should also show a balance of £660, but on the credit side. This latter balance under this title could be incorporated in the Trial Balance embracing all the accounts of the firm.

It may happen that in the course of business a few accounts in

the Creditors Ledger go into the debit—that is, the balances are debit ones in contrast with the majority in the Ledger which are in credit. If we assume that in the above instance the total of debit balances is £10 at 1st December, we should expect to find a further credit of this sum in the account as the first entry. Further, if it is assumed that during the period these accounts were not touched, then at 15th December these debit balances would still exist. We should then make a third debit entry of "To Balance . . . £10" and bring down this sum to the credit of the Adjustment Account. In the same way, the G.L. Adjustment Account in the Debtors Ledger might show a small debit balance. The firm's complete Trial Balance might then contain the following entries—

	Dr.	*Cr.*
	£	£
No. 1 Creditors Ledger Adjustment A/c . .	10	660
No. 1 Debtors Ledger Adjustment A/c (say) .	3490	20

Were the Balance Sheet prepared at this point the figure of debtors should be given as £3500 and that for creditors £680.

A rather different position arises when there is an account in a Debtors Ledger for, say, H. Harmer with a debit balance of £50 and another for the same person in the Creditors Ledger with a credit balance of £10. On balance Harmer is a debtor for £40 and the transfer of the credit balance to the debtor account will effect this. Such a transfer will have to be recorded in the relative adjustment accounts also if these are to tally with the accounts they are raised to check.

QUESTIONS

1. State what "difference" would be caused in the books of a business by each of the following errors—

(*a*) The omission from the list of debtors' balances, compiled for the purpose of the Trial Balance, of a debt of £12 5s. due from P & Co.

(*b*) Omission to post from the Cash Book to the Discount Account the sum of £5 7s. 6d., representing discounts allowed to debtors during July.

(*c*) Omission to make any entry in respect of an allowance of £8 10s. due to Q & Co. in respect of damaged goods.

(*d*) Posting an item of wages paid, correctly entered as £31 15s. in the Cash Book, as £31 5s. in the Ledger Account.

(*e*) Posting £2, being cash received from the sale of an old office typewriter, to the debit side of "Office Equipment" Account.

Note. These errors are to be taken as affecting different sets of books having no relation one to another. *R.S.A.*

2. On preparing a Trial Balance from a set of books the sides are found not to agree, the Dr. total being £25,305 1s. 11d. and the Cr. £25,080 12s. 9d.

You are convinced that nothing has been omitted and that all the figures are arithmetically correct, all postings, additions, etc., having been independently checked. What is the probable nature of the error made and what will be the correct totals of the Trial Balance? *R.S.A.*

3. The book-keeper employed by John Horton handed you a Trial Balance which included on the debit side an item "Suspense Account, £97 8s. 2d." He stated that this was the difference between the two sides of the Trial Balance which he could not trace. On investigation you find that the difference is caused by the following errors—

(*a*) The Sales Day Book has been overcast on page 87 by £100.

(*b*) The Returns Outwards for November, amounting to £30 11s. 8d., have been posted to personal accounts only.

(*c*) A cheque for £70 6s. 4d. received from Barton Bros. has been posted to their Sales Ledger Account as £76 4s.

(*d*) A first and final dividend amounting to £2 7s. 6d. received from the trustee in bankruptcy of Hubert Wilkins has not been posted to the Sales Ledger Account. The full amount of the debt (£19) has been written off as bad during the year.

(*e*) A cheque for £12 4s. 10d. paid to J. Smithson for goods supplied has been posted to his credit in the Sales Ledger.

Show the entries (Journal or Ledger) which are necessary to correct the above errors. *R.S.A.*

4. The following errors are discovered in the books of a business concern:

(*a*) £47 10s. paid for new office furniture has been charged to Office Expenses.

(*b*) £39 3s. 6d., representing a monthly total of discounts allowed to debtors, has been posted from the debit side of the Cash Book to the credit of Discount Account.

(*c*) An entry of £10, representing the retail value of goods returned to X & Co., wholesalers, has been made in the Returns Outwards Book and posted. The amount should have been £7, the invoiced value of the goods in question.

Show the entries necessary to correct these errors. The original wrong entries are not to be deleted. Subject to this restriction, make the corrections in whatever form you consider most appropriate. *R.S.A.*

5. A difference in a set of books has been carried to a Suspense Account and you are asked by the proprietor of the business to trace this difference. On investigation you find that it is caused by the following errors—

(*a*) A total in the Sales Day Book of £765 17s. 6d. was carried forward as £756 17s. 6d.

(*b*) A payment of £1 18s. 4d. for goods purchased from A. Brown & Son had been posted twice, once to the personal account and once to cash purchases.

(*c*) The June discounts received and allowed, amounting to £10 9s. 7d. and £12 2s. 9d. respectively, had been posted to the wrong sides of the Discount Account.

(*d*) A cheque for £40 paid to a customer for a car purchased from him had been posted to his credit in the Sales Ledger.

(*e*) The debit side of the General Expenses Account had been undercast by £5.

Show the Suspense Account as it would appear after you have corrected the errors. *R.S.A.*

6. The following errors have been made during 1934 in a set of books—

(*a*) The Sales Day Book was undercast by £10 in April.

(*b*) A customer's personal account has been correctly credited with 15s. 3d. discount but no corresponding entry made in the discount column of the Cash Book.

(*c*) Discounts allowed for July, amounting to £7 4s. 9d., were posted to the credit, instead of the debit, of discount account.

(*d*) A debit balance on a customer's account was carried forward 10s. short.

(*e*) An old credit balance of £2 5s. standing on a customer's account was entirely overlooked when extracting the balances.

Draw up a statement showing the effect of each of these errors on the Trial Balance drawn up at the end of the year and state what "difference" the Trial Balance will show. *R.S.A.*

7. Give the Journal entries necessary to correct the following errors—

(*a*) £200 posted in error to the debit of Office Fittings instead of Machinery.

(*b*) Cash Purchases, £150, posted from the Cash Book to the debit of A. Reed's Account. *R.S.A.*

8. Correct by Journal entries, the following errors in the books of a builder—

1933

May 15. £17 10s. received from D. Perkins posted to the account of P. Dawes.

May 17. £33 expended by the proprietor on private expenses posted to Office Expenses Account.

May 18. £26 cash received for the sale of a horse posted to Sales Account. *R.S.A.*

9. The following is one of the accounts appearing in the nominal Ledger of a trading concern which closes its books annually on the last day of February—

RENT AND RATES

Dr. *Cr.*

1931		£	1931		£
Mar. 1	To Balance— b/d Rates	65	Mar. 1	By Balance— b/d Rent	200
„ 31	„ Cash rent for three months to date	300	1932		
May 14	„ Do. Rates to 30/9/31	320	Feb. 29	By Profit and Loss A/c	1890
July 3	„ Do. Rent	300	„ 29	„ Balance c/d	61
Oct. 2	„ Do. do.	300			
Dec. 10	„ Do. Rates to 31/3/32	366			
„ 31	„ Do. Rent	300			
1932					
Feb. 29	To Balance c/d	200			
		£2151			£2151

State shortly and concisely, the nature of the information conveyed to you by this account, and in particular what the balances represent.

Also calculate how much of the figure of £1890 represents rent and how much rates. *R.S.A.*

10. From the following extract from the books of Henry & Co., you are required to prepare the Sales Ledger and Purchases Ledger Adjustment Accounts for the year ended 31st March, 1933, and to bring down the balances.

	£	s.	d.
Sales Ledger balances at 31st March, 1932	20,196	2	5
Purchases Ledger balances at 31st March, 1932	12,375	18	6
Credit Purchases	101,150	7	9
Credit Sales	132,823	–	11
Cash received from Customers	90,987	19	4
Cash paid to Creditors	71,556	17	10
Interest charged to Customers	71	5	–
Discount Allowed	2,080	10	9
Discount Received	1,226	1	3
Creditors' Accounts paid through Petty Cash	39	6	7
Bills Receivable received	22,800	–	–
Bills Receivable met	22,360	–	–
Returns Inwards	4,875	16	6
Returns Outwards	5,203	12	7
Bad Debts	2,209	13	2
Bills Receivable dishonoured	150	–	–
Bills Payable met	23,720	–	–
Bills Payable accepted	23,850	–	–
Cash paid to Customers	47	8	6
Transfer from Sales to Purchases Ledger	78	8	11

On 31st March, 1933, there were credit balances in the Sales Ledger amounting to £50 9s. 6d. *R.S.A.*

11. The following is an extract from the "Adjustment Account" in one of the Sales Ledgers of a business which balances its Ledgers monthly—

		£	s.	d.			£	s.	d.
Feb. 28	To Cash	4,158	15	6	Feb. 1	By Balance b/d	9,172	3	1
28	,, Discount	209	17	2	28	,, Sales	4,321	5	–
28	,, Returns	57	10	–	28	,, Carriage	43	1	3
28	,, Balance c/d	8,762	16	8	28	,, Transfer K–P Sales Ledger	12	10	–
	£	13,548	19	4		£	13,548	19	4
					Mar. 1	By Balance b/d	8,762	16	8

Explain the meaning of each of the items appearing in this account, and state from which books the several entries are posted.

R.S.A.

12. From the following information compile a Sales Ledger Adjustment Account, as it would appear in the General Ledger of a Trader, bringing down the balance as on 31st May, 1931.

1931			£	s.	d.
Apr.	30.	Balance	6,784	5	2
May	2.	Bad Debt written off	6	14	7
,,	9.	Transfer from Bought Ledger (contra account)	12	9	–
,,	31.	Carriage and packing charges not put through Sales Journal	32	10	9
		Sales for month	10,184	8	1
		Returns for month	317	14	5
		Cash received during month	9,814	13	2
		Cash repaid on account overpaid	2	–	–
		Bills Receivable accepted during month	350	10	–
		Ditto dishonoured	48	15	–
		Discounts allowed during month	319	5	7
		Commission allowed to a customer on introduction of a new customer	3	10	–

13. P Q & Co. make their Sales Ledger and Bought Ledger self-balancing by means of separate Adjustment Accounts.

At the end of the year the schedule of trade creditors agrees with the balance of the Bought Ledger Adjustment Account, the schedule of debtors is less than the balance of the Sales Ledger Adjustment Account by £9, and the nominal Ledger Trial Balance (which incorporates the Adjustment Accounts) agrees.

State what you can infer about the nature or position of the error (or errors) in the books, and give examples of three different kinds of error, any of which separately would cause the result shown.

R.S.A.

CHAPTER 7

THE TRADING ACCOUNT—TURNOVER

TRADING ACCOUNT

It has been shown that the information supplied by the Purchases and Sales Accounts is, of itself, insufficient to enable a business man to ascertain accurately his gross and net profit or loss. An approximate calculation can be, and is, frequently made where the percentage mark-up and the mark-downs are known and adhered to by those responsible. Even in this event, if the net profit or loss is desired there must be information available as to the ratio which overhead expenditure bears to the sales or turnover. Where an accurate knowledge of the gross profit or gross loss is desired, a new calculation must be made and this is done by means of a Trading Account.

Let us consider the account given below, first with a view to seeing what information can be derived from it, and second, what conclusions must not be drawn.

Trading Account of A. Trader

Dr. For the year ending 31st December, 1935 *Cr.*

	£	£		£	£
To Stock (1st Jan., 1934) . .		1,200	By Sales . .	10,250	
,, Purchases .	8,200		*Less* Returns	250	10,000
Less Returns	100	8,100	,, Stock (31st Dec., 1934) (at cost)		1,800
To Gross Profit transferred to P. & L. A/c . .		2,500			
		£11,800			£11,800

The heading, so frequently forgotten by students, is of vital importance since it definitely fixes the period during which the gross profit was made. If the period has been one in which firms of the type of Mr. A. Trader's have had a prosperous time, by reason of external economic causes, then one's judgment of the adequacy of the gross profit must be modified. Or again, if the period were "the half-year ending 31st December," then one's estimate of the size of the concern and its potential annual sales volume must be doubled.

The debit entries in the Trading Account relating to stocks and purchases are offset by credits in the Stock and Purchases Accounts; thus clearing these latter in preparation for the records

relating to the following year. As the Sales and Purchases Returns Accounts in the Ledger show credit balances, debit entries will be made in them. In the case of the Stock Account a new debit balance equal to the valuation of the final stock appears.

It must be realized that these stock figures are arrived at by the process of stocktaking, i.e. a count or measurement of the physical stocks is made and a valuation placed on the quantities. The valuation is such as A. Trader thinks justified by his own experience and the current market conditions existing when the pricing was effected. Thus the December stock figure could be the stock on hand valued at cost prices or it might be a valuation based on current purchase or selling prices.

Assume that by the 31st December the market price of A. Trader's stock has fallen by 10 per cent then if the lower valuation is adopted, as it should be, the figure of £1800 becomes £1620 and consequently the gross profit is diminished by £180. The reverse process of raising the final stock valuation, even if commercially unsound, is mathematically possible. It should be obvious to the student that the same problem of valuation arises whenever a Trading Account is prepared and thus if the final stock is valued at £800 this sum becomes the opening figure in the Trading Account for the succeeding year.

Turning to the Purchases and Sales figures we may assume that those given are the cost prices of all the goods bought and the prices realized when such goods were sold. We see that A. Trader has returned goods valued at £100 to his suppliers, and that he has had £250 worth returned to him by his customers. It should be noted that while it is apparent that the bulk of goods purchased has been disposed of we have no information regarding the composition of the unsold stock. Thus, all, or, at least, a part of the goods constituting the January stock may be still unsold at the end of the year. If such is the case A. Trader is faced with a further problem—even if he has adopted the lower of the two valuations given. Is that lower basis justified if the stock has deteriorated considerably in value? Where depreciation has taken place then the retention of the higher figure is misleading as the gross profit is inflated.

There is another aspect of this account which is doubly important, since it is not immediately apparent. Sales may be made on cash or credit terms and it follows, therefore, that of the net sales figures of £10,000 A. Trader has not yet received the balances standing in his debtors' accounts in respect of these sales. Equally, an unknown fraction of the goods making up the £8100 purchases, and the final stock may not have been paid for when the account was drawn up at the end of the year. So that though we are

calculating in terms of £ s. d., none of the items given in the account represents a payment or a receipt of cash for the total amount mentioned. It will be seen that the gross profit earned is not represented by an equivalent or greater sum in the bank account of A. Trader. Gross profit is not cash in hand or at the bank. Actually a position which is almost the reverse is nearer the truth; because, if A. Trader finds it easy to sell goods profitably he will purchase them with such cash as is received by him, or on credit by virtue of the sales made. In general terms it may be said that when a business prospers and is making adequate gross profit, cash and bank balances tend to fall, and the greatest need is for more capital. Whether such capital is to be supplied by A. Trader taking a partner or by borrowing is a matter which need not be considered here. The converse of the above fact is also true, for if trade is bad then it is not wise to invest cash received from debtors in goods and therefore the cash and bank balances tend to increase.

The student will have noted that there has been no mention of quantities in the above Trading Account, and it is, therefore, impossible to draw any conclusions in so far as they are affected by number, volume or weight. Should the trader, by chance, be dealing in a uniform article we may make some deductions. Thus, if there has been no change in the cost of purchases and the two stock valuations are on the same basis then we can say that the closing stock is physically greater by 50 per cent. If, on the other hand, there has been a rise in price during the year then the volume of stock is less. It is considerations such as these that will influence the buying policy of a concern, for it is still a general wish to purchase in the cheapest market, consistent with quality, and sell in the dearest.

It is possible where the percentage added to the cost prices of purchases is known and adhered to for a Trading Account to be adapted to give further information. Thus, assume that a firm starts a period with 500 articles in stock to which it adds a further 1000 all costing £1 each. Suppose that it sells 1400 of these articles at 25s. each and has 80 on hand at the end of the period, which it values at cost. We may express this information in account form as follows—

Dr. TRADING ACCOUNT *Cr.*

	£		£
To Stock	500	By Sales	1750
,, Purchases	1000	,, Stock	80
,, Gross Profit	330		
	£1830		£1830

If the sales figure is converted to cost price we obtain a check upon the final stock since the opening stock and purchases are both at cost. That is, we are simply multiplying numbers throughout by the same basic figure, £1. The above Account then becomes—

Dr.			*Cr.*	
	£		£	£
To Stock at start . . .	500	By Sales . . .	1750	
,, Purchases	1000	,, *Less* 20 per cent	350	
				1400
		,, Stock at end . .		80
		,, Stock shortage . .		20
	£1500			£1500

It will be seen that though the Trading Account shows a profit of £330 it fails to disclose the stock shortage. This principle is of service to multiple shop organizations whose head offices charge their branches with the stock sent to them at selling prices or at a fixed percentage on the cost price.

A Trading Account, like many other things in this life, has the defects of its advantages. It has been stated above that the preparation of the account involves the clearing of all balances existing in the Stock, Purchases and Sales Accounts. The Purchases and Sales figures are naturally cumulative since they represent the total of goods bought and sold during a period of twelve months. This condensing of a year's transactions has the merit of simplicity but it effectively hides all the price and sales trends of the period. Much may, and frequently does, happen to a business in the course of a year, and facts of vital importance may be obscured when all sales and purchases are so consolidated. A Trading Account covering a year's operations does not give any indication of seasonal fluctuations; of the preference of customers for one article rather than another or of the greater sales made in one area as compared with a second. A rise, for example, in the general level of purchase prices is reflected in a lower gross profit figure unless there has been a corresponding rise in selling prices. The reverse would apply if a merchant paid less for his goods, but with more than one change this clarity is lost. This "cumulative" difficulty is surmounted, to some extent, by the compilation of Trading Accounts covering shorter periods, analysed by commodity or department. Such an analysis, while of value in assessing the relative attractiveness of commodities or the efficiency of departments, still falls far short in furnishing the vital information which is essential to successful

management. What doctor would elect to treat a patient on the information afforded by an annual temperature chart? Control is a day-to-day affair and a more frequent review of the results obtained is necessary if it is to be both sensitive and enlightened.

TURNOVER

Since, in a merchandising business, profit cannot be made unless goods are sold at profitable prices and the debts collected, it follows that turnover or sales is a matter of paramount importance. Within these conditions it is desirable, therefore, that the volume of sales should be increased and that all factors which tend to prevent this should be regarded as unfavourable and, if possible, eliminated. Hence the failure to determine accurately customer demand and to have balanced stocks on hand must tend to lessen the sales figures. Or again, the failure to inform sales-people of the selling points of new goods will have the same effect. The necessity for the modern retailer to purchase large assortments which may be delivered slowly by manufacturers will also endanger the high level of sales desired. Seasonal changes and the rapid succession of different fashions both adversely affect sales volume.

Where a concern has purchased too heavily and its stock selection is poor, further losses are entailed. At stocktaking the firm, for the purpose of constructing a Trading Account, will mark down the prices of those goods which it considers overvalued. Poor methods of display, uninspiring selling technique or even errors when selling prices were initially fixed will result in mark-downs becoming essential. It was shown previously, when the Trading Account of A. Trader was considered, that the process of writing down the value of his closing stock naturally tended to diminish his gross profit. If the student will refer to the account in question, he will see that the cost basis of valuation of the final stock has been adopted.

The sum of £1800 may have been arrived at by finding that the stock on hand was composed of 1800 articles which originally cost £1 each. If the current market price exceeds £1, A. Trader is justified in retaining the value of his final stock unchanged. A. Trader, however, may have decided that though he had hoped to sell these articles at 25s. each it will be impossible in every case, since a dozen are shop-soiled and he can only hope to obtain, say, 21s. Thus he has lost 12 times 4s. or £2 8s. by mark-downs and the inclusion of the dozen articles at £1 each in the £1800 does not show the loss incurred. If, however, he valued these soiled goods at 16s. each, then the final stock value would

fall to £1797 12s., or £1800 less £2 8s. This 48s. fall in value below cost is, of itself, insufficient to turn the gross profit into a gross loss and the mere statement of the stock value at £1797 12s. hides the fact that a mark-down loss has been faced. A careful inspection of the stock sheets and the physical stock discloses the real facts which are hidden in the account.

There is a further danger confronting the retailer who feels compelled to write down his proposed selling prices because his goods have become old-fashioned or damaged. The danger is that, if the quantity of such goods is considerable, the shopkeeper may be unable to sell them in the succeeding period and eventually they may have to be even more drastically reduced. Two solutions of this difficulty are possible: (1) turnover may be increased and the volume left over consequently diminished, and (2) the trader may recognize his mistake, and make his first loss his last by a more substantial first mark-down.

To illustrate these points assume the following figures which relate to two similar concerns—

Concern A

Purchases (valued at selling prices)	£25,000
Percentage of goods sold in first period	85
Gross profit or mark-up	33⅓%
Mark-down percentage at end of first period . . .	1½
Future mark-down percentage on original selling prices .	3

Now if 85 per cent of the above purchases are sold they realize £21,250, and if 33⅓ per cent of this sum is profit, the proprietor has made £7083. There remains in stock 15 per cent of the original purchases, i.e. goods to the value of £3750. The loss incurred on marking these goods down 1½ per cent at the end of the first period is £56 and future mark-downs at 3 per cent would amount to £112. Thus the total loss due to mark-downs is £168. When the whole stock has been disposed of £8333 gross profit has been earned and £168 has been lost—a net gain of £8165.

Concern B

Purchases (valued at selling prices)	£20,000
Percentage of goods sold in first period	57½
Gross profit or mark-up	37½
Mark-down percentage at end of first period	1½
Future mark-down percentage on original selling prices .	7½

Now if 57½ per cent of those purchases are sold, they realize £11,500, and if 37½ per cent of this represents profit, the proprietor has made £4312. There remains in stock 42½ per cent of the original purchases, i.e. goods to the value of £8500. The loss

incurred on marking these goods 1¼ per cent at the end of the first period is £106 and future mark-downs at 7½ per cent would amount to £637. Thus, the total loss due to mark-downs is £743. When the whole stock has been disposed of, £6666 gross profit has been earned and £743 has been lost—a net gain of £5923.

An examination of these results will show that Concern A is satisfied with a rate of gross profit approximately 4 per cent lower than Concern B, and at the end of the first trading period is prepared to take a mark-down of 1½ per cent as against the 1¼ per cent of Concern B. The lower rate of turnover in Concern B results in a greater mark-down of £51 in the first year and an excess of £554 in succeeding periods. It will be found that despite the higher mark-up and lower initial mark-down in the second firm the percentage return on invested capital is less in the latter concern.

Thus far the term "turnover" has been taken to mean the goods turned over, or, in other words, net sales. A greater sales volume in a definite period can be achieved, either with a small stock which requires frequent replenishing, or with a larger stock subject to less frequent additions. It will be obvious, if a large turnover can be obtained with a small stock, that the capital invested is less and the return of profit thereon relatively greater. Where a firm is working on borrowed capital, a further economy is effected since interest charges are less. More frequent purchasing of stock also results in merchandise being fresher and more fashionable, both of which factors help to increase still further the turnover.

The calculations of rates of turnover vary, and it must be remembered that if comparison is to be made between one retail shop and another or between one department and another, it is essential that the method of calculation should be uniform.

TRADING ACCOUNT OF C. KNOX
For the Year ending 31st December, 1935

	£		£
To Stock . . .	2,000	By Sales	11,250
,, Purchases . .	8,000	,, Stock	2,500
,, Gross Profit . .	3,750		
	£13,750		£13,750

Suppose that C. Knox, whose Trading Account is given, is able to add 50 per cent to the cost prices of his goods with the above result. In calculating his rate of turnover he might adopt the following method—

Sales at selling price ÷ Average Stock at selling price.

$$\text{The rate of turnover in this event} = \frac{11250}{\left(\frac{2500 + 2000}{2}\right) \times \frac{3}{2}}$$

$$= \frac{11250}{3375}$$

$$= 3{\cdot}3 \textit{ times per annum.}$$

Assuming that the sales were made evenly throughout the year, Knox was selling about £216 weekly from a stock valued on a selling price basis of £3375. In other words, he is turning over his stock approximately every sixteen weeks.

From the above Trading Account it is impossible to say whether the average stock value of £2250 at cost is a fair figure. A more accurate figure would be obtained if the average stock per month or period of four weeks were divided by the sales per week. Thus, if a stock valued at retail at £1800 is maintained to effect sales of £600 per week, the rate of turnover is once every three weeks, or 17·3 times per annum.

The student may prove for himself that if the sales and average stock figures were both reduced to their cost equivalents then the resulting ratio would be the same. In practice this would prove to be substantially the case.

If C. Knox prefers to divide his sales at selling prices by the average stock at cost then the rate of turnover will be: $\frac{11250}{2250}$ or *5 times.*

To illustrate the desirability of an increase in the rate of turnover and the effects which such an increase has, let us assume the following facts—

	Dept. A	*Dept. B*
Average Stock at Selling Prices	£3000	£3000
Weekly Sales	£600	£750
Rate of Gross Profit on Sales	33⅓%	33⅓%
Percentage of Overhead Expenses	15%	15%

On the basis of these assumptions the following facts become evident—

	Dept. A	*Dept. B*
	£	£
Annual Sales (Weekly Sales × 52)	31,200	39,000
Gross Profit per annum	10,400	13,000
Overhead Expenses (exclusive of sales expenses), say 15 per cent of sales	4,680	5,850
Balance remaining	5,720	7,150
Sales Expenses, say	780	850
Net Profit	4,940	6,300

In Dept. A the whole of the stock is sold in five weeks and if this rate of sales can be maintained then the annual rate of turnover is equal to 52 ÷ 5 or 10·4. In the other department where four weeks sales are equivalent to the total stock the annual rate of turnover is 52 ÷ 4, i.e. 13. The resultant net profit in Dept. B of £6300 is an increase of 27½ per cent on that of Dept. A but the sales increase is one of 25 per cent. It will be noticed that though the overhead expenses have, in each department, been assumed to be 15 per cent, the reasonable assumption has been made that the 2½ per cent allowed for sales expenses in the first department would not increase at the same rate as the sales volume.

An important fact which emerges from a consideration of net profit and the rate of turnover is that a high rate of net profit is not, of itself, desirable. Thus if an article is only in stock four weeks and a net profit of 5 per cent is made on it then the selling department in the course of a year is making (52 ÷ 4) × 5 per cent or 65 per cent. Alternatively where the rate of net profit is 1 per cent higher but the turnover a week longer the profit is only $\frac{52}{5} \times 6 = \frac{312}{5}$ or 62·4 per cent.

Another ratio, with wnich the student should familiarize himself, is that obtained by dividing the figure of sales by that of debtors. Where sales during the year amount to, say, £16,000 and debtors to £4000, then the ratio of 4 to 1 shows that three months sales are tied up in books debts and, though profit has been taken into account, it has not yet been received. As the sales figure is an addition of cash and credit sales it is desirable to ascertain the percentage of the latter. Thus if £12,000 of the above total is in respect of credit sales then four months are locked up. This ratio when taken in conjunction with the firm's credit terms is an index of the efficiency of the department charged with the collection of debts.

QUESTIONS

1. On the 1st July, a trader had a stock of 5000 articles which he valued at 1s. each. During July he purchased 6000 more, costing 1s. 4d. each, but he returned thirty as they were damaged. He sold 10,000 at 2s. each, and valued his remaining stock at 1s. each. Calculate in account form the gross profit he made during the month. *R.S.A.*

2. On 1st July, 1934, A. Wheeler, a bicycle erector and dealer, had in stock eighteen machines, Type A, at £4 5s. each, and sixteen Type B at £5 5s. each—both types being valued at cost price.

During the ensuing six months he made sixty machines Type A, at a cost of £3 16s. each, and forty Type B at a cost of £5 each.

During the same time he sold the whole of his initial stock and also forty-five machines Type A and twenty-nine Type B, erected during the period.

The sale prices were: Type A, £5 10s. each; and Type B, £7 each.

Show Wheeler's Trading Account for the six months ending 31st December, 1934. *London Chamber of Commerce.*

3. At 1st July, 1935, the stock of a firm was £3600 and by 30th September it had purchased a further £5000 worth and its sales amounted to £8400. On 1st October a fire occurred and only £500 worth of stock was salved. Prepare a statement of claim for the Insurance Company on the assumption that all goods sold showed a 33⅓ per cent profit on selling prices.

If the firm mentioned in the preceding question had only made 33⅓ per cent profit on half its sales and 25 per cent on the remainder show clearly the effect on the sum claimable for goods lost by fire.

4. A fire occurred on the premises of a merchant on 15th June, 1932, and a considerable part of the stock was destroyed. The value of the stock salved was £450.

The books disclosed that on 1st April, 1932, the stock was valued at £3675, the purchases to the date of the fire amounted to £10,494 and the sales to £15,650.

On investigation it was found that during the past five years the average gross profit on the sales was 36 per cent.

You are required to prepare a statement showing the amount the merchant should claim from the Insurance Company in respect of stock destroyed or damaged by the fire. *R.S.A.*

5. A firm commenced on 1st June, 1933, with a stock of 1000 articles costing 6s. each. During the month it purchased 3000 similar articles at 5s. each and sold 2200 at 8s. each. During the month 100 of the articles were returned to the firm in good saleable condition, by purchasers. At 30th June, 1933, fifty of the articles in stock had been damaged and were worthless. The saleable stock in hand was valued at 5s. each.

Show, in the form of a Trading Account, the gross profit or loss made on these articles during the month. *R.S.A.*

6. William Robinson sub-lets the flat over his shop at an annual rent of £48, payable quarterly. During 1933 the tenant of the flat pays the rent due from him on 25th March, 24th June and 29th September, but at 31st December has not paid the quarter's rent due. Show the Rent Account in William Robinson's books after the preparation of his Profit and Loss Account for the year ending 31st December, 1933. *R.S.A.*

7. How would the following affect—

(*a*) The net profit of a business for the year 1934.

(*b*) The Assets of a business as stated in the Balance Sheet on 31st December, 1934.

(1) Over-valuation of stock at 31st December, 1934.

(2) An amount debited to a Real Account instead of a Nominal Account.

(3) An amount debited to the account of a creditor instead of to the account of a debtor? *London Chamber of Commerce.*

8. X sets up in practice as a doctor on 1st January, 1932. During 1932 he received fees amounting to £545, and at the end of the year £237 was owing to him. During 1933 the fees received amounted to £831, and at the end of the year £364 was owing to him. His expenses amounted to £265 in 1932 and £320 in 1933, there being no liabilities outstanding at the end of either year.

Ascertain his profit for each of these years. *R.S.A.*

CHAPTER 8

PROFIT AND LOSS ACCOUNT, INCOME AND EXPENDITURE ACCOUNT, AND CONSIGNMENT ACCOUNTS

PROFIT AND LOSS ACCOUNT

WE have seen that the construction and balancing of the Trading Account result in the assessment of a concern's gross profit or loss; and the closing of the accounts in which purchases, sales, and returns are recorded. The old balance in the Stock Account is transferred and a new one substituted for it. There must remain in the Ledgers open accounts in respect of debtors, creditors, assets and the various expenses incurred. So long as this last group of expense accounts remains open, and not set off against the gross profit or added to the gross loss, our knowledge of the final results of operation is incomplete. It is to calculate the net profit or loss that the Profit and Loss Account is constructed.

PROFIT AND LOSS ACCOUNT OF A. TRADER

Dr. For the Year ending 31st December, 1935 *Cr.*

	£		£
To Salaries	410	By Gross Profit transferred from Trading A/c .	2500
,, Heating and Lighting.	220	,, Discounts Received .	80
,, Postage	100		
,, Advertising . . .	230		
,, Carriage Outwards .	310		
,, Insurance	90		
,, Rates and Taxes .	420		
	1780		
,, Balance being Net Profit transferred to Capital A/c . . .	800		
	£2580		£2580

What has been said with respect to the heading given to a Trading Account applies with equal force to the Profit and Loss Account and the period covered by the latter must coincide with that of the former. In drawing up the account, the balance of gross profit obtained in the Trading Account is transferred to the credit side and added to any income of a miscellaneous character.

The credit entry of Discounts Received is balanced by a debit entry in the account of that name in the Ledger, thus clearing it. Similarly, the various debits, with the exception of the balance, are transfers of the balances existing in the nominal accounts in the Ledger. This process of clearing may perhaps be better appreciated by the student when he realizes that it is but another application of the principle of Double Entry.

Figures have been assumed in this account which result in the credit side exceeding the debit; in other words the gross profit made on the sale of goods exceeds the expenses of operating the business. The excess in this case is termed net profit. Had the expenses in our illustration amounted to £2680 the balance of £100 inserted on the credit side of the account would have been termed "net loss." If a trader sells his goods below cost he naturally incurs a gross loss, which together with the running expenses increases the net loss.

As has been shown in the discussion of capital the net increase in a firm's assets is, over a period of time, regarded as the net profit earned during that time. The Trading Account shows the gross increase in the circulating assets, since the sales credited in the account are represented by either book debts or cash. Expenses necessarily incurred in effecting this increase are deducted from the gross increase, and the net increase is logically transferred to the Capital Account. With the addition of net profit to capital, or the deduction from it of net loss, the circle is complete. Reference to partnership and joint-stock companies' accounts will show that net profit or net loss is transferred to accounts other than that of capital. These are not exceptions of principle, since in all cases profit tends to increase the liability of the firm to its proprietors and conversely, loss lessens the liability. In the case of partnerships the separation is a matter for agreement between the partners, and with limited companies it is the result of legislation.

It will be evident that the Profit and Loss Account resembles the Trading Account in that the entries of expenses and miscellaneous income made in it are cumulative in character, and the account as a whole historical. Trends, whether upward or downward, are lost and their mass effect can only be shown by a comparison of one year's net profit with that of preceding years. For example, when stating that Salaries amounted to £410 there is no indication whether these have been raised or reduced by the management during the year. Fewer people may have been employed in a slack period and the number increased when justified by extra business. The items of "Heating and Lighting" and "Rates and Taxes" are not too informative for we do not

know, for example, what fractions of the £220 refer to the two types of expenditure. In passing we may say that the addition of these two items in the Profit and Loss Account does not imply that they are recorded in the Ledger in one account. When this grouping of expenditure items is not kept within reasonable limits the position becomes even more obscure. Reference to the published accounts of limited companies will show that this feature of "omnibus" items is used in order to conceal companies' expenditure.

A rather different picture of the Profit and Loss Account is obtained if we express each of its items as a percentage of the net sales figure contained in the Trading Account. The account would then read—

Dr.			*Cr.*
	%		%
To Salaries	4·1	By Gross Profit	25·0
,, Heating and Lighting	2·2	,, Discount	0·8
,, Postage	1·0		
,, Advertising	2·3		
,, Carriage Outwards	3·1		
,, Insurance	0·9		
,, Rates and Taxes	4·2		
Total Expenditure	17·8		
,, Balance, Net Profit	8·0		
	25·8		25·8

A. Trader may now see his business in a rather more simplified aspect. He may say that for every £100 worth of goods sold it costs him £4 4s. in salaries, £1 in postage, and 18s. for insurance. A comparison of these figures with similar percentages for preceding years should give some indication of the operating efficiency of his business. If £410 is paid to distribute £10,000 worth of goods, the relative efficiency is greater than if, say, £230, is paid to move £5000 worth. Expenses expressed as percentages permit of a more accurate comparison than is possible by an examination of the actual figure of money expended. Where the sales are of a uniform character the expenses incurred in distribution may also be expressed as a fraction of the selling price per article. Thus, if £310 is paid for outwards carriage on 40,000 similar articles, we may say that the average cost of carriage per article equals $\frac{310 \times 240\text{d.}}{40{,}000}$ or 1·86 pence.

It should be noted that if statistics of expenses relative to

several consecutive periods are available they may be usefully plotted in graph form.

Since no expenses other than those incurred in running the business are included in the Profit and Loss Account, it may be said that the total operating expenditure is £1780 and that £800 is the operating profit. One aspect of the profit-earning capacity of the enterprise is the ratio £800 bears to the balance of A. Trader's Capital Account. Thus, if the balance of the Capital Account at the beginning of the year is £12,000, the proprietor is earning $6\frac{2}{3}$ per cent on his investment. Though the actual figure of net profit earned is, naturally, of real importance to a business man, the percentage return on his money is of equal importance. If, for example, the Profit and Loss Account contained a credit entry "Dividends Received . . . £20"—being income received from an investment of £800, it is apparent that this investment is bringing in $2\frac{1}{2}$ per cent. If A. Trader can realize this investment without loss and invest the proceeds in his own business, the rate of return on this sum will be increased by approximately 4 per cent or £32 per annum. This statement assumes that there is scope for the effective use of the additional capital in the business and that the rate of operating profit is maintained.

Once the amount of net profit has been ascertained and transferred to the proprietor's Capital or Current Account, it can be set off against any sums which may have been drawn against it. A prudent business man would during the accounting period make estimates of the profit being earned and adjust his drawings so that they did not exceed this sum. If it be assumed that A. Trader had drawn in cash £700 from his business during the year, then it follows that the £800 increase in the value of assets due to profit earned must be offset by the fall in the cash balance. This net increase of £100 is thus still "in" the business in the sense that it is represented by assets. A method of arriving clearly at the form which the undrawn profit has taken will be dealt with in the section devoted to Balance Sheet analysis.

It will suffice at this stage to re-enunciate the principle that where profit exceeds the drawings made in anticipation of it the resources of the enterprise are strengthened. Conversely, when the drawings exceed the profits earned the resources of the concern are being diminished to the extent of the difference. Whenever he is thinking of profits the student will be wise to remember that profit, though measured in terms of money, is not necessarily in the form of money but is represented by assets. Since the proprietor has a claim on such assets for any profit earned, profit must figure in the Balance Sheet of his business as

a liability. The policy of retaining profits within businesses gives rise to those adjustments made on the grounds of expediency which are treated in the next chapter.

INCOME AND EXPENDITURE ACCOUNT

Those who are familiar with the principles underlying the construction of a Profit and Loss Account should experience no difficulty in dealing with an Income and Expenditure Account for the same principles are involved in both cases. The two accounts serve the same purpose: the ascertainment of the sum by which gross profit or income exceeds operating expenses, or *vice versa*. While the Profit and Loss Account is used when dealing with trading concerns the Income and Expenditure Account is employed when clubs, societies, etc., are being considered.

The desirability of recording accurately the transactions of a trading concern is never questioned, but the same attitude of mind is not always adopted towards clubs. The best interests of a club are served by an insistence on the part of its members that the club's transactions should be recorded fully and accurately. More interest at general meetings could, with advantage, be taken in the accounts and the manner in which the final results are arrived at and displayed.

INCOME AND EXPENDITURE ACCOUNT OF THE EASY GOING CLUB

Dr. For the Year ending 31st December, 1935 *Cr.*

Expenditure	£	*s.*	*d.*	*Income*	£	*s.*	*d.*
To Postage . . .	1	10	–	By Subscriptions: £ *s. d.*			
„ Printing and Stationery	4	10	–	Annual 13 – –			
„ Gratuities . .		10	–	Life . 2 2 –			
„ Cost of Annual Dinner	64	–	–		15	2	–
„ Sundries . . .	4	–	–	„ Profit from Dance .	3	10	–
„ Balance—being Surplus of Income over Expenditure . .	3	2	–	„ Sale of Tickets for Annual Dinner .	59	–	–
	£77	12	–		£77	12	–

When examining the above account the reader should remember three important facts: (1) that the expenses recorded on the debit side may or may not have been paid, (2) that the income may or may not have been received, and (3) that the amounts on both sides refer only to the calendar year 1935. Thus, while it may be assumed that £2 has been paid in respect of postage

and gratuities, it cannot be inferred that the bills in respect of the printing, stationery, and annual dinner have been met. Similarly, it must be remembered that it is not certain that all the annual subscriptions have been received by the treasurer. On the other hand, money may have been received during the year in respect of subscriptions for past or future years; and, if this is the case, such sums must be excluded from the account. If a system of subscriptions for life membership is in operation, it becomes essential that sums received in respect of such an arrangement must be apportioned over an agreed period of years. Assuming that £10 10s. has been so received and that it is thought that five years should be the period to be covered, then in each year the sum of £2 2s. or one-fifth of the member's payments is transferred from the credit of the Life Subscriptions Account to the credit of the Income and Expenditure Account. The Subscriptions Account will, for four years, show a diminishing balance which will, as a credit, appear on the liabilities side of the club's Balance Sheet. From the account it appears that a profit has been made on the dance and a loss has been incurred on the dinner but it is not certain that all income in respect of these functions has actually been received.

CONSIGNMENT ACCOUNTS

A firm's Trading and Profit and Loss Accounts enable it to ascertain the gross and net margins arising from its own sales. Many enterprises, however, in a natural desire to increase their sales volumes entrust their merchandise to others to sell for them. Once this fact is realized it will be seen that such additional accounts are necessary as will give the profit or loss on such sales, and the extent of the indebtedness of the agents. As the agents do not own the goods consigned to them they can only be charged or debited with the sums for which they sell their principal's merchandise. Similarly they must be credited with the amounts disbursed or earned by them, which it has been agreed shall be borne by the consignor. The accounts of agents are personal accounts subject to the rules already enunciated; and any balances therein will appear in the consignor's Balance Sheet.

Calculations of profit in respect of consigned goods are carried out in Consignment Accounts, which normally contain the features of both trading and revenue accounts.

It is assumed that Thompson Limited consigned goods costing £1600 to their agent in South Africa, who sold a part of them for £2000 and sent an Account Sales to the English firm. The Account Sales is a document, not an account in the book-keeping sense of the term, which describes in detail the goods sold and the

prices realized. There will be deducted from such gross proceeds the expenses of landing, storage, and insurance which have been expended by the agent, as well as the commission to which he is entitled.

CONSIGNMENT ACCOUNT

Dr.			*Cr.*
	£		£
To Goods on Consignment .	1600	By Agent (being Gross proceeds of goods sold) .	2000
,, Packing Charges . .	35	,, Stock (at cost) . 400	
,, Freight . . .	200	plus share of expenses 138	538
,, Insurance . . .	80		
,, Sundry Expenses. .	12		
,, Discounting Charges .	15		
,, Landing Charges . .	60		
,, Customs Dues . .	120		
,, Storage . . .	15		
,, Insurance . . .	15		
,, Commission (%) . .	30		
,, Del Credere Commission	20		
,, Net Profit . . .	336		
	£2538		£2538

Examination of the Consignment Account will show that the debit entries in it fall conveniently into four groups. There is the first entry representing the cost of the goods sent overseas and similar to the entries for opening stock and purchases in a normal Trading Account. The next group is that of the English or home expenses incurred in moving the goods, whereas the third group is the foreign expenditure. Both of these sets of entries may be compared with the entries for administrative and distributive charges found in a Profit and Loss Account. Since in the above illustration the agent is receiving a *del credere* commission, for which he guarantees that his principal shall incur no bad debts, this latter item does not occur in the Consignment Account. Were such losses made, the agent would debit his own Bad Debts Account and credit the debtor concerned. If, however, the agent received no such commission, he would be entitled to make the debit against his principal and the latter would charge the Consignment Account with the loss. Lastly, the item of net profit which may be transferred to an intermediate account to be added to the net profits and/or losses on other consignments. The balance of this last account will be transferred to the general Profit and Loss Account of Thompson Limited.

Both of the credit entries are similar to the Sales and Final Stock figures of a Trading Account. The figure of sales will be debited to the agent though he will have made both cash and

credit sales. An agent's unsold stock must be valued by the English consignor for inclusion in the latter's Balance Sheet. The problem of valuation is not solved if Thompson Ltd. decide to adopt a cost price basis and ignore any conditions existing in their foreign market which might suggest a lower figure. A further difficulty arises by virtue of the revenue character of the two groups of expenditure. It will be seen that, with the exception of the two items of commission, the expenses were incurred on behalf of the total consignment; and are being charged against the revenue of only a fraction of it. Put in different words we may say that the sale of three quarters of the consignment is required to bear four quarters of the expenses. To adjust this inequality a sum equal to:

$$\frac{\text{Value of Goods Unsold}}{\text{Value of Total Consignment}} \times \begin{array}{c}\text{Expenses incurred for the}\\ \text{whole Consignment}\end{array}$$

is added to the figure of final stock. This addition naturally increases the net profit or decreases the net loss on this first section of the account but what is gained here will be compensated for by the larger debit in the second section against which will be set the sales of the final quarter of the goods.

QUESTIONS

1. Give two reasons why interest on Capital Accounts should be taken into account in dividing the profits of a partnership.

Mention a case, if you know of one, where one of these reasons does not apply. *R.S.A.*

2. A, a sole trader owning an established business, took B into partnership on 1st January, 1933, at which date the goodwill of the business was agreed to be worth £6000. A's capital (exclusive of goodwill) was £10,000, and B brought in £3000 as his capital. Interest on capital accounts was to be allowed at 5 per cent, and A and B were to divide the remaining profit in the ratio of 2 to 1.

The profit for 1933, before charging interest, was £2600.

Calculate the division of this sum between A and B on the alternative assumptions that—

(1) Goodwill was ignored on B's entering the business.
(2) Goodwill was taken into account at its correct value.

R.S.A.

3. Richards and Harris are in partnership, sharing profits in the proportion of 3 to 2. On 31st December, 1931, the assets owned by the firm, less the liabilities, are valued at £3143 and on 31st December, 1932, at £3373. During the year 1932 Richards has drawn £1400 in cash and taken goods valued at £75, and Harris has drawn £1200 in cash, while Jones (a friend of Richards) has lent the firm £500 which has not yet been repaid.

Harris at the same time brought in £200 as additional capital, which he borrowed privately from Smith.

Ascertain the firm's profit for the year and the amount by which each partner's capital has increased or decreased. *R.S.A.*

4. Messrs. Brooks and Noyes have respectively £5000 and £3000 invested in a business to which Noyes is compelled to devote considerably more time than his partner.

How would you suggest that they share profits and losses? Apply the principles you have suggested to the division of a loss in one year of £300 and a profit in another of £1000.

5. Brown, Johnson, and Green are in partnership. On 1st July, 1932, their capitals, on which interest at the rate of 5 per cent per annum is allowed, were £10,000, £6000, and £2000 respectively, and on 1st January, 1933, Johnson brought in a further £1000.

Green is entitled to a salary of £400 per annum, of which £300 is charged against Brown's share of profits and £100 against Johnson's. The first £2000 of profit, after charging interest is divisible between Brown, Johnson, and Green in the proportions of 5, 4, and 1 respectively; the next £2000 in the proportions of 9, 8, and 3; the next £2000 in the proportions of 8, 7, and 5, and any balance equally between the three.

The profit for the year ended 30th June, 1933, amounted to £6125, before charging interest. Prepare a statement showing the division between the partners. *R.S.A.*

6. X, Y, and Z were in partnership sharing profits four-eighths, three-eighths, and one-eighth respectively.

The partnership agreement provided that on the death of a partner his share of the Goodwill was to be valued at one-half of the share of profits credited to his account during the last three completed years.

Y died, and the Balance Sheet preceding his death contained a Goodwill figure of £1600. The firm's profits for the three years preceding Y's death were £4000, £3200, and £2400 respectively.

Show the amount (and your workings) which would be due to Y's estate in respect of Goodwill, and make the necessary Journal entry, the remaining partners not taking their share into account. *R.S.A.*

7. On 1st January, 1933, George Chappel commenced business with £2000 in the bank. His position on 31st December, 1933, was as follows: Machinery, £1200; Sundry Creditors, £240; Sundry Debtors, £310; Cash in Hand, £45; Cash at Bank, £195; Value of Goods on Hand 31st December, 1933, £645; Fixtures and Fittings, £120.

During the year he had withdrawn £20 every month, including December. Find his net profit for the year and prepare his Balance Sheet on 31st December, 1933. *R.S.A.*

8. On 1st April, 1934, J. Benton commenced business by paying the sum of £1200 into a business banking account and buying the business of W. Shields, a going concern for £980.

On 31st December, 1934, his Assets and Liabilities were as follows—

Cash in Hand and at Bank, £163; Stock, £796; Sundry Debtors, £92; Sundry Creditors, £204; Furniture and Fittings, £240; Motor Vans, £220. Benton had withdrawn the sum of £24 each month (including April and December) since commencing business.

Show the profit made by J. Benton up to the 31st December, 1934, after allowing for depreciation on Motor Vans at 20 per cent per annum, and a statement in the form of a Balance Sheet showing the position of Benton's business on 31st December, 1934.

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9. On 1st April, 1931, O'Brien & Co., of Dublin, consigned to Smith Limited, of Liverpool, fifty cases of butter for sale on commission. The butter was invoiced at £10 a case *pro forma*.

The consignors pay in connexion with this consignment freight and insurance, £17, and the consignees pay landing charges and other expenses amounting to £8.

Smith Limited sell for cash fifteen cases on 6th April, 1931, at £13 a case, fifteen cases on 7th April at £14 a case, and the remainder at £13 10s. a case on 8th April, on which day they forward to the consignors an Account Sales and a cheque for the amount due after deducting their commission of 2½ per cent on sales and a further 1¼ per cent del credere commission.

You are required to give the form of Account Sales and the entries which O'Brien & Co. would make in their books. *R.S.A.*

10. Copy out the following ledger accounts. Complete and close them off for the year ended 31st December, 1932, and state which amounts would appear in the Balance Sheet on that date and their position therein.

BUILDING REPAIRS ACCOUNT

Dr. *Cr.*

		£	*s.*	*d.*			£	*s.*	*d.*
1932									
Mar. 31	To Cash . .	28	5	–					
Oct. 18	,, ,, . .	98	2	–					
Dec. 31	,, Amount due but unpaid	18	9	–					

STOCK ACCOUNT

Dr. *Cr.*

		£	*s.*	*d.*			£	*s.*	*d.*
1932									
Jan. 1	To Balance .	890	–	–					

(The stock on 31st December, 1932, was valued at £920.)

R.S.A.

11. A limited company makes up its accounts annually to 30th June, and shows rent and rates as one item in the Profit and Loss Account.

The rent is £2000 per annum, payable quarterly, and the payments during 1933–4 were as follows—

Rent for quarter to—

30th June, 1933.	Paid 10th July, 1933.
30th September, 1933.	,, 27th September, 1933.
31st December, 1933.	,, 6th January, 1934.
31st March, 1934.	,, 24th March, 1934.
30th June, 1934.	,, 28th June, 1934.

The rates for the half-year to 30th September, 1933, amounted £590 and were paid on 15th May, 1933; for the half-year to 31st March, 1934, the

amount was the same and was paid on 10th November, 1933; for the half-year to 30th September, 1934, the amount was £610, paid on 20th May, 1934.

Show the Rent and Rates Account as it would appear in the Company's ledger for the year to 30th June, 1934.

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12. (*a*) AB rented business premises at £180 per annum payable quarterly. He paid the first quarter's rent for 1935 by cheque on 1st April, the second quarter by cheque on the 1st July, and the third by cheque on 1st October, 1935.

Show how his Rent Account would be balanced off if he closes his books on 31st December, 1935.

(*b*) CD paid by cheque an annual insurance premium of £72 on 1st May, 1934.

On 1st May, 1935, he took out new insurances, the total premiums (old and new) being paid by cheque amounting to £87.

If he closes his books on 31st December, each year, show his Insurance Account for the years 1934 and 1935. *London Chamber of Commerce.*

13. Z. Cobb and R. Cobb are in partnership, sharing profits and losses as to two-thirds and one-third respectively. You are required, from the following information, to show their capital and current accounts in the ledger for the year ended 30th September, 1934.

	Z. Cobb	R. Cobb
	£	£
Capitals (Balances at 1st October, 1933) . .	8800 *Cr.*	3600 *Cr.*
Current Accounts (Balances at 1st October, 1933)	203 *Cr.*	104 *Cr.*
Additional Capital brought in on 1st April, 1934	1200	1400
Drawings during the year	2000	1500

The profit for the year ended 30th September, 1934, was £2970 out of which interest at 5 per cent per annum on their capitals is to be credited to the partners. *R.S.A.*

14. On 1st January, 1934, the assets of a partnership were £10,000 and its liabilities were £1000, but a year later the excess of assets over liabilities has risen to £11,400. Assuming that the partners' capitals at 1st January, 1934, were in the ratio of 2 : 1, that they shared profits and losses in the same ratio and that their quarterly drawings were £350 and £180 respectively, prepare the two Current Accounts.

15. BALANCE SHEET OF MESSRS. CAPE AND GOWN
At 1st January, 1936

	£		£
Creditors	500	Cash	50
Loan (Gown) . . .	1000	Debtors	650
Capital A/cs:		Stock	800
Cape	2000	Land and Buildings . .	3000
Gown	1000		
	£4500		£4500

Messrs. Cape and Gown, who share profits and losses in the ratio of 2 : 1, are anxious to dissolve their partnership. Gown offers Cape £2500 for his share of the business. What offer should Cape make Gown under these circumstances? Give reasons for the amount you state.

16. A, a sole trader, prepared accounts as on 31st March, 1934, when his capital account showed a balance of £9000. On 1st April he took in B as a partner on the terms that before B's entry a goodwill account for £4000 should be raised, that B should bring in £3000 in cash as his capital, interest at 5 per cent per annum should be allowed on capital accounts, and the balance of profit can be divided between A and B in the proportion of 3 : 1.

The profit for the year to 31st March, 1935, before charging interest, was £4050. Show the division of this between A and B. Show also what the division would have been had no provision been made as to goodwill, the other arrangements being as stated above. *R.S.A.*

17. P is in business as a sole trader, but keeps no proper books of account. An investigation into his affairs discloses the following facts—

(*a*) His business assets, less liabilities, on 1st January, 1929, were worth £4190, and on 1st January, 1934, £3340.

(*b*) On 1st January, 1929, he had private investments which had cost £7200.

(*c*) In 1930 he received a legacy from an uncle, free of duty, amounting to £10,000.

(*d*) During the years 1929 to 1933 new investments had been acquired at a cost of £5250, and investments which had cost £4100 had been sold realizing £3210.

(*e*) Dividends from investments amounted to £1440 during the five years.

(*f*) P estimates that during the period he has lost £8000 through gambling and backing horses, and that his personal expenditure had averaged £750 a year. On 1st January, 1934, he owed £400 (not included in the above £8000) to his bookmakers.

On the basis of the above figures you are required to calculate as accurately as possible the profit earned by the business during the period in question. Draw attention to any assumption which your answer may involve.

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18. The following is a summary of the cash transactions of the Blanktown Literary and Debating Society for the year ended 30th June, 1935.

Receipts	£	*Payments*	£
Balance from last year	319	Rent and Rates	368
Subscriptions and Entrance Fees	1855	Salary of Caretaker	45
Donations	85	Heat, Light, Cleaning, Repairs and Sundries	272
Life Membership Subscriptions	250	Lecturers fees and Expenses	835
Interest from 3% Local Stock	94	Purchase of Furniture	40
Profit from Entertainment	42	Secretary's Salary and Office Expenses	248
		Purchase of £500 Local Loans Stock	473
		Balance at Bank	342
		Balance in Hand	22
	£2645		£2645

At the beginning of the year the Society owned £4000 Local Loans Stock, which had cost £3251, and Furniture and Equipment then valued at £870. There were living at that date thirty-two life members, each of whom had paid a subscription of £50, but of these two died during the year. Ordinary subscriptions in arrear at the beginning of the year amounted to £35, and at the end of the year to £45, and one quarter's rent (£60) was due both at the beginning and the end of the year.

Prepare the Society's Income and Expenditure Account for the year ended 30th June, 1935, and Balance Sheet as on that date. £75 is to be written off the Furniture and Equipment by way of depreciation.

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CHAPTER 9

ADJUSTMENTS

In discussing the Subscriptions Account in the previous chapter it was shown that the credit balance in it could not justly be transferred in one sum to the Club's Income and Expenditure Account—an adjustment being necessary to ensure greater accuracy. Herein lies one reason for making an adjustment between the amounts recorded in the Ledger Nominal Accounts and those to be transferred to the concern's principal Nominal Account. This is that the apportionment of revenue and/or expenditure to the appropriate period when it was earned or to which it referred should be as accurate as is possible. In the subsequent treatment of adjustments it will be seen that a second principle, that of expediency, may be also concerned.

AMOUNTS OWING

Assume that from 1st January, 1935, to 28th December a firm has paid £3600 in salaries. Its practice is to pay every Saturday salaries calculated up to and including the preceding day. The calendar will show that the year ends on a Tuesday and that the next pay day is on 4th January, 1936. Thus, if the firm closes its books on 31st December, at that date it will not have paid the salaries earned on 28th, 30th and 31st, i.e. two and a half days. If the sum of £3600 is transferred to the Profit and Loss Account an error in principle will have been made resulting in an over-statement of net profit since the sum does not represent the year's salaries. If the amount earned by the firm's employees is estimated at £25 the account should appear as follows—

Dr. SALARIES ACCOUNT *Cr.*

1935		£	1935		£
Dec. 28	To Balance . .	3600	Dec. 31	By P. & L. A/c, balance transferred	3625
,, 31	,, Amount owing carried forward . .	25			
		£3625			£3625
			1936		
			Jan. 1	By Balance b/d .	25

Then the debit of £3625 to the Profit and Loss Account represents a year's salaries, paid and unpaid; and the Salaries Account

credit, which is one of the concern's liabilities, will appear in the Balance Sheet dated 31st December, 1935.

The same procedure should be adopted in other cases where sums are owing if the stated net profit and the Balance Sheet are to be accurate. If, for example, a firm has borrowed money from a bank or has issued debentures, the outstanding interest owing must be brought into account.

AMOUNTS PREPAID

Business firms may make payments for services which will be rendered over a period which is not concurrent with that covered by the accounts. Municipal half-years end on 31st March and 30th September, or an insurance policy is effected on 1st November, 1935, to cover the ensuing twelve months. If, for such a policy the premium of £36 has been paid, then to charge the full amount to the 1935 Profit and Loss Account assuming this to cover the calendar year, is manifestly inequitable. The Insurance Account should appear as under—the debit balance of £30 carried down on 31st December will appear in the Balance Sheet of that date as an asset.

INSURANCE ACCOUNT

Dr. *Cr.*

1935		£	1935		£
Nov. 1	To Bank . .	36	Dec. 31	By P. & L. A/c (being one-sixth of the annual premium . .	6
			Dec. 31	By Balance c/d .	30
		£36			£36
1936					
Jan. 1	To Balance b/d .	30			

BAD DEBTS RESERVE

In the creation of a Bad Debts Reserve which will have the effect of diminishing a firm's net profit, we have an instance of an adjustment involving the principle of expediency. Despite care taken in granting credit to its debtors, a firm at the end of its financial year will be faced with a loss caused by the non-payment of some of the debts owing to it. Such irrecoverable sums are written off, i.e. the outstanding balances concerned are eliminated from the accounts in the Debtors Ledger and transferred to the current Profit and Loss Account. There remains the problem of assessing the value of those debts still unpaid.

The process of valuation may be a detailed one involving an

inspection of each of the accounts having regard to such factors as the length of time which has elapsed since the last payment and the previous history of the account. When a decision has been reached as to what fractions of the total debtors are good, bad, or doubtful, such fractions can only be estimates. A debt considered good may realize but a percentage of its full value and another thought to be doubtful may be paid in full. A second method for arriving at the possible future loss arising through non-payment is based on the past experience of the creditor firm. Reference to the results of past years will probably show that the total of bad debts incurred has been, within narrow limits, nearly always the same percentage of total debtors. The percentage while varying between one firm and another, should tend to remain constant in one particular business.

An example may make the position clearer. At 31st December, 1934, W. Lamb's debtors amount to £3000; his past experience has been that 4 per cent of his debts are likely to prove bad and that his net profit for 1934 was £650. Lamb may show £3000 in his Balance Sheet and regulate his personal expenditure on the basis of £650. In doing so he will close his eyes to the loss caused by non-payment that he will be called upon to meet during the next year. The prudent policy to adopt would surely be to prepare for the anticipated loss. This Lamb does by reserving £120 from his profit, reducing it to £530 and, at the same time, reducing his personal expenditure accordingly. Entries in his accounts and Balance Sheet would be as follows—

PROFIT AND LOSS ACCOUNT

Dr. For Year ending 31st December, 1934 *Cr.*

	£		£
To Bad Debts Reserve (4% on £3000) .	120	By Balance . . .	650
,, Capital A/c. . .	530		
	£650		£650

Dr. BAD DEBTS RESERVE ACCOUNT *Cr.*

					£
			Dec. 31	By P. & L. A/c .	120

Dr. DEBTORS ACCOUNT *Cr.*

		£			
Dec. 31	To Balance. .	3000			

Balance Sheet of W. Lamb
As at 31st December, 1934

	Assets	£	£
	Sundry Debtors	3000	
	Less Bad Debts Reserve . .	120	
			2880

It should be noted that the creation of the reserve has not necessitated a segregation of cash since no entries have been made in that account. Lamb, by withdrawing less from his business, leaves it stronger and, therefore, better able and equipped to withstand the anticipated losses. The reserve may thus be regarded as an amount of profit earmarked to offset or neutralize a particular loss. Should the reserve made prove excessive for that purpose the reverse operation may be performed. In this last case a debit entry is made in the Bad Debts Reserve Account and a corresponding credit in the Profit and Loss Account. The first entry lessens the reserve and the latter increases the profit shown by the accounts of the enterprise. It must be remembered that the amount to be deducted from the figure of debtors in a Balance Sheet is the balance of the reserve at the same date.

DISCOUNT RESERVES

It may be argued that the above value of debtors in Lamb's Balance Sheet is still an exaggerated one since those debtors who do pay will be allowed cash discount. If such cash discount allowed is at 2½ per cent, then, assuming the accuracy of the estimate of bad debts, the discount to be allowed will be 2½ per cent of £2880, i.e. £72. To offset this expense Lamb may make a further reserve of £72, and the following additional account will appear in the Ledger.

Reserve for Discount on Debtors Account

						£	s.	d.
				Dec. 31	By P. & L. A/c	72	–	–
						£72	–	–

The net profit now available for transfer to Lamb's Capital Account is £458 (£530 less £72) and the Balance Sheet entry reads—

		£	s.	d.	£
	Sundry Debtors .	3000	–	–	
	Less Bad Debts Reserve . .	120	–	–	
		2880	–	–	
	Less Reserve for Discount	72	–	–	
					2808

It will be noted that if in the Balance Sheet this item is stated as: "Sundry Debtors *less* Bad Debts and Discount Reserves . . . £2808" there is no indication as to the size of the reserves or their adequacy. Where a concern's available profit permits it, an excessive amount may be transferred to these reserves, and the resultant Balance Sheet figure for debtors is correspondingly lower than it need be.

Such an excess not being disclosed may be termed a secret or inner reserve.

DISCOUNT RESERVE OR CREDITORS

When considering his creditors W. Lamb is faced with a similar problem of valuation, for if he does not take into account the discount he will receive the Balance Sheet may be said to show a greater liability than actually exists.

Assume his creditors amount to be £1600 and the average rate of discount to be 4 per cent.

CREDITORS ACCOUNT

Dr. *Cr.*

							£	s.	d.
					1934 Dec. 31	By Balance .	1600	–	–

DISCOUNT RESERVE ON CREDITORS ACCOUNT

Dr. *Cr.*

		£	s.	d.					
1934 Dec. 31	To P. & L. A/c	64	–	–					

PROFIT AND LOSS ACCOUNT

Dr. *Cr.*

							£	s.	d.
					1934 Dec. 31	By Discount Reserve on Creditor	64	–	–

BALANCE SHEET OF W. LAMB
As at 31st December, 1934

Liabilities	£	£	
Sundry Creditors .	1600		
Less Discount Reserve . .	64		
		1536	

There are two objections to the creation of this last type of reserve—

(*a*) A credit to the Profit and Loss Account is made and the net profit of the concern is thereby increased before the profit has been earned.

(*b*) By bringing the £64 into account in 1934 the trader is anticipating his revenue since the profit, when made, should be credited to the Profit and Loss Account for that year.

INTEREST ON CAPITAL

The arithmetical division of profits earned by a partnership is a comparatively simple calculation, whereas the fixation of the shares to be received by each partner involves problems in addition to those arising from human nature. There will be differences in the technical and commercial ability of the partners, differences in the time they can devote to the enterprise and the "business" they can bring in. Normally, too, there will be a difference in the amounts of capital which they are able or prepared to invest. If the partnership is to be an example of *uberrimae fide*, then the division of net profit or net loss must be such as to leave each and all the partners satisfied. Interest on capital is a method of bringing into account the differences that may exist in the capital sums invested. A partner's capital could earn interest or a dividend if placed in a business to which he was not called upon to devote time in managing and directing. His return from the partnership should, therefore, include at least two sums—first an agreed return on his investment and second a return for his business acumen. It should be noted, however, that under Sect. 24 of the Partnership Act of 1890 a partner is not entitled to a salary or to interest on his invested capital unless there has been an expressed or implied agreement to that effect.

Harry and Sidney are two brothers who have invested £5000 and £3000 respectively in their partnership, agreeing to charge the profits with interest on capital at the rate of 5 per cent per annum and share the residual amount as to three-fifths and two-fifths. The divisible profit in 1934 of £950 would be shared as follows—

Interest on Capital . . .	Harry . . .	£250	
	Sidney . . .	150	
			£400
Remaining profit of £550 . .	Harry (3/5) . .	330	
	Sidney (2/5) . .	220	
			550
			£950

Harry's Current Account will be credited with £580, £250 plus £330, and Sidney's Current Account with £370. Had the partnership only earned £300 the shares would have been—

Interest on Capital . . .	Harry . . .	£250	
	Sidney . . .	150	
			£400
Resulting loss of £100 is shared by	Harry (3/5) . .	£ 60	
	Sidney (2/5) .	40	
			100
			£300

Of this profit Harry receives £250 less £60 or £190, and Sidney £150 less £40, i.e. £110.

INTEREST CHARGED ON DRAWINGS

Partners, having agreed to the principle of interest on capital, may decide that interest on their drawings shall be charged at the same or an agreed rate per cent. Thus from the sums shown above would be deducted interest calculated on the sums withdrawn for the period elapsing between the dates of withdrawal and the end of the financial year. If for Harry and Sidney the sums to be so deducted were £20 and £10 respectively, then the division of profits becomes—

Interest on Capital . . .	Harry . £250 — £20 =	£230	
	Sidney. 150 — 10 =	140	
			£370
Remaining profit of £580 .	Harry (3/5) . . .	£348	
	Sidney (2/5). . .	232	
			580
			£950

Harry earns in this case £578 and Sidney £372. The student will have noticed that interest on capital is "paper" interest and that there is no connexion between it and bank interest allowed on the firm's deposit account. Throughout the above division there would be no entries made in the firm's Cash Book. Entries

are only made therein when either of the partners draws cash against his share of the prospective profits.

DEPRECIATION

If the student has understood the principles underlying the adjustments made in the Profit and Loss Account, he will have appreciated that most of the difficulties which arise are caused by a desire to measure profit or loss over an artificial period. A business, *qua* business, takes no notice of 31st December. The theory of depreciation, for example, does not arise when profit is measured as the accretion to capital which has taken place when the undertaking has come to an end. A simple illustration of this occurs in a joint venture where the profit equals the net revenue from the venture less the originally invested capital.

Depreciation may be defined as the gradual loss in value of an asset due to internal or external causes. Plant and machinery lose value through use: patents and leases by the passing of time or machinery again by virtue of obsolescence. If the book values of any such assets are retained at their original amounts then the Balance Sheet must show overstatements. At the same time it must not be thought that the object of calculating depreciation is to enable the values of such assets to be reduced to their realizable values. The value of a machine to a manufacturer is to be measured by the efficiency with which it can accomplish the work for which it was installed. On the other hand, depreciation arises during the process of earning revenue and for this reason revenue should bear a charge in respect of it. Such charges are in the large majority of cases merely estimates since the number of factors involved is usually more than one.

In leases where time is practically the only factor and in the case of some wasting assets where consumption can be accurately measured, the calculation of depreciation is a simple matter. There is, however, the further and more difficult problem of replacement, for if no provision is made for this, when the asset is incapable of functioning, new capital must be obtained for the purpose.

The effect of inserting depreciation into the accounts is two-fold—

(*a*) To diminish the amount of distributable profit; and
(*b*) To retain in the enterprise the amount of profit so diverted.

A simple illustration will show this.

The Equal Instalment Method. A lease is purchased for a term of three years for £150. The distributable net profits, before the deduction of depreciation, are £600, £700, and £800.

LEASE ACCOUNT

Dr. *Cr.*

1933		£	1933		£
Jan. 1	To Bank . .	150	Dec. 31	By Depreciation .	50
			,, 31	,, Balance . .	100
		£150			£150
1934			1934		
Jan. 1	To Balance . .	100	Dec. 31	By Depreciation .	50
			,, 31	,, Balance . .	50
		£100			£100
1935			1935		
Jan. 1	To Balance . .	50	Dec. 31	By Depreciation .	50
		£ 50			£ 50

PROFIT AND LOSS ACCOUNT

For the Year ending 31st December, 1933

Dr. *Cr.*

	£		£
To Depreciation (lease) .	50	By Balance. . . .	600
,, Balance transferred to Capital A/c . . .	550		
	£600		£600

The Balance Sheet values of the lease are in the first two years £100 and £50 respectively. The three credits for depreciation are balanced by three debits in the Depreciation Account which account is closed annually by transferring the balance therein to the Profit and Loss Account. Thus the net profits then available for the proprietor are £550, £650, and £750; and, if he withdraws for his personal account use sums *less* than these then the resources of the business in December, 1935, are £150 greater than they would have been had £2100 been withdrawn. In so far as his resources are greater, the task of renewing the lease or purchasing another is easier; though the charging of profits with depreciation does not of itself provide the capital needed to replace the asset.

If this method of depreciation is applied to machinery, then calculations will be more complicated by reason of the additions that may be made from time to time. There will also be, in this case, an assumption, which is not always warranted, that the

service obtained from a machine does not vary from year to year. That is, no account is taken of the additional wear and tear arising through overtime—or of its diminution during a slack period.

The Diminishing Balance Method. In the Fixed Instalment method an equal amount was charged against profit in each year and the book value of the asset was therefore written down annually by equal instalments. An alternative method, which is common by reason of its use in income tax practice, is to deduct a fixed percentage of the diminishing balance. The employment of this method can never reduce the book value of an asset to zero and its use in the case of a lease, which has no residual value, cannot be recommended. Thus, in the case of the above lease, if a rate of 50 per cent had been used the values at the end of each of the three years would have been £75, £37 10s., and £18 15s. If 66$\frac{2}{3}$ per cent had been used the value of the lease in December, 1935, would have been £5 11s. 1d.

Where the residual value of an asset is small and its life is relatively short a very high rate of depreciation is necessary when this method is adopted. It has been argued that the method may be commended since the debits to Profit and Loss Account diminish with the years and the charges for repairs increase. The compensating effect of these two charges is true only over long periods, and it is open to criticism if the recording of two distinct sets of facts should be influenced by this effect.

Annuity Method. To illustrate this method assume the depreciation in three years at 5 per cent of an asset valued at £1000 and the entries made in the Ledger would be as follows—

ASSET ACCOUNT

Dr. | | | | | | | | | *Cr.*

		£	s.	d.			£	s.	d.
Year 1	To Balance .	1000	–	–	Year 1	By Depreciation .	367	4	2
,, 1	,, Interest .	50	–	–	,, 1	,, Balance .	682	15	10
	£	1050	–	–		£	1050	–	–
Year 2	To Balance .	682	15	10	Year 2	By Depreciation .	367	4	2
,, 2	,, Interest .	34	2	9	,, 2	,, Balance .	349	14	5
		£716	18	7			£716	18	7
Year 3	To Balance .	349	14	5	Year 3	By Depreciation .	367	4	2
,, 3	,, Interest .	17	9	9					
		£367	4	2			£367	4	2

Dr. INTEREST ACCOUNT *Cr.*

		£	s.	d.			£	s.	d.
Year 1	To P. & L. A/c	50	–	–	Year 1	By Asset A/c	50	–	–
		£50	–	–			£50	–	–
Year 2	To P. & L. A/c	34	2	9	Year 2	By Asset A/c	34	2	9
		£34	2	9			£34	2	9
Year 3	To P. & L. A/c	17	9	9	Year 3	By Asset A/c	17	9	9
		£17	9	9			£17	9	9

As the amount required to write off £1 in three years at 5 per cent by the Annuity Method is £0·367208, this decimal was multiplied by 1000 to obtain £367 4s. 2d., the sum credited each year in the Asset Account above.

From these accounts we may construct the following table—

	Depreciation Debit			Interest Credit			P. & L. A/c Net Charge			Annual Increase		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Year 1 .	367	4	2	50	–	–	317	4	2		—	
Year 2 . .	367	4	2	34	2	9	333	1	5	15	17	3
Year 3 . .	367	4	2	17	9	9	349	14	5	16	13	–
	£1101	12	6	£101	12	6	£1000	–	–		—	

An examination of the net charges debited to Profit and Loss Account shows an annual increase which is more apparent than real. It has been shown above that the effect of debiting depreciation against gross profit is to conserve the assets of the enterprise. If, therefore, the assets have been so retained, then they may be said to earn income. Thus £15 17s. 3d. is 5 per cent of the net sum reserved in the first year and £16 13s. is 5 per cent of the net sum reserved in the second year, so that the increasing charges against revenue are offset by the assumed additional earning capacity.

For the sake of simplicity, a short term has been selected though the annuity method is more suited to assets whose term of life is both certain and long. While it is frequently suggested that the market rate of interest should be employed, it would seem more logical to use a rate which represents what the business can earn by the retention of the stated amounts.

The Sinking Fund Method. In this method we will again assume an asset, valued at £1000, which it is desired to write

off over a period of three years. The annual Sinking Fund instalment needed to provide £1 in three years at 5 per cent is £0·317208 which multiplied by 1000 gives £317 4s. 2d., the sum debited annually to Profit and Loss Account. It will be noted that this amount is less than the corresponding sum employed in the Annuity Method by £50 or the interest on the asset value for one year at the agreed rate per cent. The appropriate entries are given below—

Dr. SINKING FUND ACCOUNT *Cr.*

		£	s.	d.			£	s.	d.
Year 1	To Balance c/d	317	4	2	Year 1	By P. & L. A/c	317	4	2
		£317	4	2			£317	4	2
Year 2	To Balance c/d	650	5	6	Year 2	By Balance b/d	317	4	2
					,, 2	,, Cash (Int.)	15	17	2
					,, 2	,, P. & L. A/c	317	4	2
		£650	5	6			£650	5	6
					Year 3	By Balance b/d	650	5	6
					,, 3	,, Cash (Int.)	32	10	4
					,, 3	,, P. & L. A/c	317	4	2
						£	1000	–	–

Dr. ASSET ACCOUNT *Cr.*

		£	s.	d.			£	s.	d.
Year 1	To Balance .	1000	–	–					

Dr. SINKING FUND INVESTMENTS ACCOUNT *Cr.*

		£	s.	d.			£	s.	d.
Year 1	To Cash .	317	4	2	Year 1	By Balance c/d	317	4	2
		£317	4	2			£317	4	2
Year 2	To Balance .	317	4	2	Year 1	By Balance .	650	5	6
	,, Cash (Int.)	15	17	2					
	,, Cash .	317	4	2					
		£650	5	6			£650	5	6
Year 3	To Balance .	650	5	6					
	,, Cash (Int.)	32	10	4					
	,, Cash .	317	4	2					
	£	1000	–	–					

BALANCE SHEET AT THE END OF YEAR 3
(before writing off the asset)

	£	s.	d.		£	s.	d.
Sinking Fund . .	1000	–	–	Asset . . .	1000	–	–
				Sinking Fund Investments . . .	1000	–	–

At this stage two distinct operations take place—

(*a*) the asset is written down by transferring the balance of the Sinking Fund Account to the credit of the Asset Account; and

(*b*) the Sinking Fund investments are realized for the purpose of purchasing a new asset.

If when these operations have been completed, a Balance Sheet were prepared it would show a balance at bank bigger by £1000. Under the annuity method no provision for the actual cost of replacement is made as it is in the sinking fund system, where the problem of available cash resources is solved by having saleable securities at hand. Against this it may be said that as most businesses can earn more than gilt-edged securities the annuity method is cheaper

	Principal at Jan. 1			Interest for Year			Annual Charge			Total carried forward		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Year 1 . .	—			—			317	4	2	317	4	2
,, 2 . .	317	4	2	15	17	2	317	4	2	650	5	6
,, 3 . .	650	5	6	32	10	4	317	4	2	1000	–	–
				£48	7	6	£951	12	6			

From the table given above it will be seen that three annual amounts of £317 4s. 2d. or £951 12s. 6d. earn £48 7s. 6d. and that the charge against the profit is less than by the annuity method.

It will be appreciated that the creation of a Sinking Fund is not limited to the extinguishing of an asset but may be applied to the repayment of a liability. In this case as will be seen the result is different, for the Balance Sheet prior to repayment would contain the following relevant entries—

Liabilities	£	*Assets*	£
Debentures—		Sinking Fund Investments.	10,000
100 bonds of £100 each .	10,000		
Sinking Fund . . .	10,000		

The investments are realized and the debenture-holders paid, which operations result in both the investments and debentures balances disappearing from the Balance Sheet. The Sinking Fund Balance, however, remains showing that, in this case, it has been built up by appropriations of profit rather than by charges against gross profit.

Before leaving this discussion of the methods, which may be adopted to write down assets and provide for their replacement, it may be worth while to note some external factors bearing on the problem. The depreciation policy of an individual firm must depend largely on the profits available and the cash resources of the enterprise. Little is gained if a net profit is turned into a net loss or a net loss increased to a larger figure if money is not available for the purchase of new equipment. Thus, it is no surprise to find that some firms in the United States allocate sums for depreciation proportional to their earnings. Others, with greater ease perhaps, transfer arbitrary sums to a reserve for depreciation, while a third group set aside an increasing amount each year. In this last method if an asset is to be written down over a period of three years the sums for depreciation would be one-sixth, two-sixths, and three-sixths of the value of the asset. That is, the amounts increase each year by the samo sum.

Obsolescence has already been noted as a cause of depreciation, but it remains to be pointed out that it will affect different firms in a different manner. The directors of a firm, for example, engaged in the manufacture of radio sets know that the greater chance of obsolescence in their case should be reflected in the employment of higher rates of depreciation. In those industries where the possibility of important improvements is more unlikely, the risk of unforeseen obsolescence arising is greater. This may find a firm financially unprepared to scrap its outdated machinery, and thus put it at a disadvantage when compared with the more fortunate enterprises which have made adequate provision in this respect.

Where the demand for a product or service falls, the revenue arising from sales will tend to fall and as a consequence the earning capacity of equipment also diminishes. It may be argued, therefore, that the value of the equipment has fallen or conversely depreciation has increased. In such a case an increase in the amount reserved is called for on the grounds of prudence though a fall in revenue may make it inexpedient, if not impossible. To follow the course of expediency and maintain dividends at their normal rate is to put such an enterprise in considerable difficulty when new equipment is required. Lastly, in the foregoing pages

it has been tacitly assumed, for the sake of simplicity, that the cost of replacing an asset will be the same as was the initial expenditure. To assume this in practice is to close one's eyes to a change that will, in all probability, take place. Where the price of equipment capable of performing the required work rises, then, on the assumption made above, the depreciation, while writing off the original asset, makes an inadequate provision for its replacement. Alternatively a firm which has investments worth £1000 of which, when realized, it need only spend, say, £900 possesses £100 additional working capital.

QUESTIONS

1. On 1st January, 1931, A. Tennant took over a shop at a rental of £240 per annum, payable quarterly. He sent a cheque to the landlord for a quarter's rent on each of the following dates: 3rd April, 1931, 2nd July, 1931, 1st October, 1931, and 5th January, 1932. You are required to show the entries in A. Tennant's Rent Account up to 5th January, 1932, Profit and Loss Account for the year ended 31st December, 1931, and Balance Sheet on 31st December, 1931. *R.S.A.*

2. On 1st January, 1930, X Ltd. bought machinery costing £8000 in all. Depreciation was written off at 10 per cent per annum by the "diminishing balance" method, the books being closed annually on 31st December.

On 30th June, 1931, additional machinery was bought, costing £1600. On 31st December, 1933, a machine (part of the purchase in 1930) which had cost £500 was sold for £210 and replaced by one of an improved type costing £610.

Write up Machinery Account from the commencement to 31st December 1934. *R.S.A.*

3. Set out the necessary journal entries to deal with the following matters—

(*a*) The writing off as bad debts of £55 due from A, £19 7s. 6d. from B, and £27 15s. from C.

(*b*) The allocation of £1000 to General Reserve.

(*c*) The transfer to Furniture and Fittings of £25 the cost of a typewriter originally posted to Office Expenses.

(*d*) The bringing into account of three months' interest accrued on a loan of £500 at 5 per cent per annum, due from D.

(*e*) The loss arising on the sale for £37 of a machine, the book value of which was £55. *R.S.A.*

4. When preparing the accounts of a firm of builders for the year ended 31st December, 1931, you find that the following matters require to be dealt with—

(*a*) A motor car which cost £360 some years ago was sold on 31st May, 1931, for £60. Depreciation at the rate of 20 per cent per annum on the diminishing balance had been regularly written off, and at 1st January, 1931, the car stood in the books at £110. On 1st May, 1931, a new car was purchased for £300.

(*b*) The firm's premises are held on a 21 years' lease which expires at the end of 1937. The original cost was £3150, and the asset had been written down to £1050 at 31st December, 1930, by an annual transfer of £150 from Profit and Loss. On 30th June, 1931, the firm purchased the lease of adjoining premises, also expiring at the end of 1937, at a cost of £975. The necessary alterations were carried out by the firm's own workmen at a cost of £125, for materials and £148 for labour, but no adjustment in respect of this work had been made.

Show the Car Account and Leasehold Premises Account as they should appear after the closing of the books to 31st December, 1931.

R.S.A.

5. A, B, and C are partners in a retail business. Give the journal entries necessary to record the following matters, on closing the books as on 31st December, 1934, the end of the year of account—

(*a*) The provision of £37 10s. as depreciation on shop fixtures and fittings.

(*b*) The charging to A of £3 10s. representing a week's wages paid by the firm to one of their van drivers, he having been employed by A during that period to drive his private car.

(*c*) The adjustment arising out of the fact that stock valued at £42 (at cost) had been distributed as free samples to the public.

(*d*) The charging of interest for the year at 5 per cent on the partners' capital accounts which were, respectively A—£9000; B—£7000; and C —£4000. *R.S.A.*

6. An asset is purchased on 1st July, 1935 for £500. What book value would be disclosed on 1st January, 1937, if it has been depreciated (*a*) by a fixed instalment of 10 per cent per annum and (*b*) by a fixed percentage of 10 per cent on the diminishing balance?

7. Explain how, when an item of expenditure fluctuates heavily from one year to another, the annual charge against profits may be levelled by means of an equalization reserve.

Mention a well-known example of a reserve of this nature, and give a *pro forma* illustration, inserting figures, to explain the method of operation.

London Chamber of Commerce.

8. On 1st April, 1934 a company purchased for £13,200 a lease of property having eleven years to run. The costs of acquisition amounted to £220. The necessary alterations were carried out at a cost of £770, and during the year the sum of £88 was spent on repairs.

On 30th June, 1934, the company purchased a motor car for £300 and the seller agreed to take in part exchange a car for which he allowed £120. The latter, which had been written down at the rate of 20 per cent per annum, stood in the books at £170.

Show the ledger accounts relating to (*a*) the leasehold property and (*b*) the motor cars after the closing of the books for the year ended 31st March, 1935. *R.S.A.*

9. On 1st January, 1927, a company purchased a 20-year lease of some premises for £30,000, and it was estimated that £3000 should be provided against the liability for dilapidations at the termination of the lease.

During 1928, the company spent £1900 on altering and improving the premises, and during 1929, a further £900 on improvements and £550 on repairs.

You are required to write up the accounts affected by the above particulars for the years 1927, 1928, and 1929, providing for depreciation as you may think advisable. *London Chamber of Commerce.*

10. Reserves may be classified under the following three headings—

(*a*) Reserve for Specific Purposes.
(*b*) Reserves for Contingencies.
(*c*) Reserves for General Purposes.

Briefly explain, and contrast, the purposes for which these classes of Reserves are provided, illustrating your reply by giving a few examples of Reserves falling under (*a*) and (*b*).

How, if at all, would the provision of Reserves under each heading be disclosed in the Profit and Loss Account and/or Balance Sheet of a Limited Company? *London Chamber of Commerce.*

11. The Balance Sheet of PQ & Co. Ltd., drawn up as on 31st March, 1930, showed Plant and Machinery valued, after writing off depreciation, at £25,500.

Depreciation had been written off regularly, from dates of purchase of the various items, at the rate of 10 per cent per annum on the diminishing value.

On 1st June, 1930, a motor, which had been bought on 1st November, 1925, for £750, was sold for £250 and replaced by a new one costing £1100.

Show the Plant and Machinery Account as it would appear in the company's books for the year ended 31st March, 1931, after writing off the appropriate depreciation for the year. *R.S.A.*

12. P Ltd. finds that the amount spent on Repairs to Machinery varies greatly from year to year. In order to equalize the charge against profits a Reserve is built up commencing in 1929 and credited with £800 each year, actual Repairs being charged against this.

The actual amounts spent were as follows—

		£
Year to 31st December,	1929	312
ditto	1930	946
ditto	1931	1353
ditto	1932	227

Write up the Reserve Account, bringing down a balance each year, and state how the balances would be shown in the successive Balance Sheets of the business. *R.S.A.*

13. On 1st January, 1931, the balance of the Horses and Carts Account in the ledger of G. Black was £57 10s. On that day he sold the horses and carts for a cheque for £45, and bought by cheque a motor van for £200. On 31st December, 1931, he estimated that the motor van had depreciated 20 per cent in value. Enter these transactions in the appropriate real accounts, and show how the latter would appear after the final accounts had been prepared and the books balanced on 31st December, 1931. *R.S.A.*

14. (*a*) Depreciation at 10 per cent is to be written off Plant and Machinery standing in the books at £3285.

Give the Journal entry required to effect this on 31st December, 1934.

(*b*) S. House, a builder, has a motor car which he uses partly for business purposes and partly for taking his family on holidays. During the

year ended 31st December, 1934, the whole cost of running the car has been charged to his business, and appears on the following accounts—

	£
Car running expenses account	124
Drivers wages account	156
	£280

S. House agrees that the business should only bear three-fourths of this expenditure. Show by Journal entry how you would make the desired adjustment. *R.S.A.*

CHAPTER 10

THE BALANCE SHEET

When the net profit or net loss of an enterprise has been ascertained, it is then possible to construct a statement which gives, or purports to give, the financial position of the concern to date. This condensed statement of the firm's assets and liabilities is termed a Balance Sheet, and resembles the two final accounts already discussed in that all are cumulative and historical. It differs from the above accounts since the statements made in it do not refer to a period of time but rather to a moment of time. Businesses are dynamic in character, for they are either progressing or losing ground. But the Balance Sheet is static, for the accountant arbitrarily calls a halt and gives information that applies at a particular date. The single Balance Sheet can thus give no indication of the continuous changes that are taking place within the business. By comparison with preceding Balance Sheets, the alterations and trends that have occurred may be noted and conclusions drawn therefrom.

Achievements, however, may be measured and forecasts made of future possibilities. Before turning to a discussion of possible methods of analysis, it is desirable to define in some detail the normal contents of Balance Sheets.

A Balance Sheet is a statement divided into two halves, showing on the left-hand side the capital and liabilities of the enterprise and on the right side the assets and property. As no property can exist without some person or firm having a claim thereto, we may regard a Balance Sheet as showing the firm's resources and the recognized claims on these forms of property or assets. The claims can naturally be divided into two groups: (*a*) those of the proprietors, and (*b*) those of external persons or firms. Thus the items, or Creditors, Bills Payable, or Bank Overdraft, represent the claims of external persons or firms against the assets. When such claims have been met the residue belongs to the proprietors or to the members of the firm. The reader will have no difficulty in recognizing that the Capital Accounts represent a part of the indebtedness to the proprietors, but he may not realize that amounts of profit which have been transferred to various reserves belong to the same people. If a business earns £10,000 in one year and of this profit, say, £7000 is distributed and £3000 is retained or "ploughed in," the latter sum still belongs to the owners. The percentage of the profit

retained internally is a matter for those directing the business, and the degree of urgency or expediency does not alter the essential character of amounts which are so transferred.

A Balance Sheet, as its name implies, is the collection of the debit and credit balances existing in a firm's books at a particular date. The credit balances are, with a few exceptions, listed on the left or liabilities side and the debits on the right or assets side. As accounts fall into three groups the debit balances can be similarly grouped—

(1) those of property accounts;
(2) those of personal accounts; and
(3) those of nominal accounts.

Students will appreciate no difficulty in regarding the first two groups as assets but the third might present some difficulty. As we have seen one function of a Profit and Loss Account is to clear the Ledger of most, if not all, of the nominal account balances and to present their cumulative effect in one sum. There may, however, be some nominal account balances which it is considered inexpedient to clear by transfer to the Profit and Loss Account. If any such balances remain in the Ledgers, they must logically be included in the firm's list of balances, i.e. its Balance Sheet. Illustrations of this type of asset, which may be termed fictitious, are more common in the Balance Sheets of limited companies. The reader is warned that goodwill does not fall in this class as it is a form of property. That goodwill is intangible and that its value as shown in the account may be inflated does not alter this fact.

Since a Balance Sheet is the collection and orderly arrangement of the debit and credit balances existing in a firm's books at a certain date it will be realized that from widely different types of business must come very different Balance Sheets. Some items, such as cash and capital, will be common to nearly all Balance Sheets but other items will be peculiar to the statements of certain firms. This diversity is intensified by reason of the structure of the business unit itself. A sole trader, for example, will have one Capital Account; a partnership several such accounts, and a joint-stock company will record its share capital in accordance with the requirements of the Companies Act, 1929, or of any Special Act under which it may be working. Speaking broadly, we may say that the diversity is rather of form than of substance. The student will appreciate this substance best when he realizes that the stated liabilities are the sources of the funds which have been converted into the property and assets opposite them. Only seldom is a certain liability

represented by one particular asset: rather is it a case of one group collectively equalling another.

A simplified Balance Sheet might read—

BALANCE SHEET OF A. WEDDEN
at 1st January, 1935

Liabilities	£	*Assets*	£
Capital A/c	5000	Cash at Bank	5000
	£5000		£5000

In this, as in succeeding statements, it will be seen that the assets or property given on the right-hand side are subject to the claims or liabilities shown on the left-hand side. At the 31st December, 1935, after trading for twelve months the Balance Sheet might read as follows—

Liabilities	£	£	*Assets*	£
Creditors		260	Cash.	50
Capital A/c . .	5000		Bank	350
Add Net Profit .	320		Debtors	800
			Stock	1100
	5320		Freehold Property . .	3000
Less Drawings .	280			
		5040		
		£5300		£5300

Many facts at once become evident. Stock has been purchased for a part of which payment has not yet been made, and the unsold portion is valued at £1100. Sales have been made and a sum of £800 in respect of them is still owing to A. Wedden, the proprietor. Further, he has acquired freehold property at a cost of £3000 and, in his estimation, Wedden had made a profit, after deducting all expenses, of £320. In anticipation of this profit he has withdrawn £280 for his personal use.

At this stage it may be well to point out the elements of uncertainty existing in this simple financial statement. The figure of £800 for debtors gives no indication as to whether a fraction of this sum may be regarded as of doubtful value or how much discount will be allowed on payments in the near future. The stock valuation of £1100 will be the same amount as appeared on the credit side of Wedden's Trading Account, where its value was subject to estimation and a decision as to the price level

to be adopted. Finally, though the Balance Sheet states the book value of the freehold property to be £3000, we cannot say if this is a fair valuation. There is no indication as to whether this last asset has been depreciated. It will be seen that in the case of the physical assets, stock and property, their values must be assumed to be accurate, particularly since no auditor's report is attached to the Balance Sheet.

To change the constitution of the firm, assume that on 1st January, 1936, A. Wedden takes his brother Richard into partnership; the latter bringing in £2000 as capital in return for a one-third share of the profits. In the Balance Sheet of the new firm the bank balance will become £2350, and on the liability side there will be an additional Capital Account for the new partner. If, during 1936, the net profit amounted to £510 we would expect to see the liability side of the Balance Sheet at the end of the year include the following items—

	£	£
Capital A/cs.		
A. Wedden	5000	
R. Wedden	2000	
		7000
Current A/cs.		
A. Wedden—		
Balance at 1st Jan.	40	
Add ⅔ Net Profit	340	
	380	
Less Drawings (say)	350	
		30
R. Wedden—		
Balance at 1st Jan.	—	
Add ⅓ Net Profit	170	
Less Drawings (say)	150	
		20

The additional information we would gain from the above would be that the brothers had decided to keep their initial capitals fixed at the sums stated; passing all profits, losses, salaries, and drawings through separate current accounts. We would know that interest on capital is not being taken into account and that the brothers had decided to share profits in the ratio of 2 to 1. The introduction of the new partner may have been responsible for the better showing of the business since the return on the capital invested has risen from 6·4 per cent to 7·3 per cent. In both cases the brothers have withdrawn less from the business than they earned. Had Richard Wedden in expectation of greater profits withdrawn £190 then the credit balance of £170 would have been exceeded and his current account would show a debit balance of £20. If so desired, the details relating to

this current account might be retained on the liabilities side of the Balance Sheet or transferred to the opposite side, but in either case the debit balance of the account would have to appear as one of the assets of the business. Richard is a debtor of the business for the amount by which he has overdrawn his profits. A possible alternative would be to deduct the £20 from his invested capital. Finally, we could say that at 31st December, 1936, the assets of the partnership would amount to £7050 plus the value of the firm's external liabilities.

GOODWILL

Among the assets appearing in the Balance Sheet of a business probably none is viewed with more uncertainty than goodwill. Those remembering goodwill as "the probability that the old customers will resort to the old place" may have some difficulty in assessing the value of that probability in terms of money. The valuation of the goodwill of a concern as x times its average profits for a given number of years, though justified on the score of its simplicity of calculation and use in business, cannot be altogether satisfactory where accuracy is a first consideration. Such a calculation implies that a present or even future value can be based on past performance. Further, if a fair value is placed upon goodwill, it does not follow that the asset will remain at this value even if profits are maintained. This will be true in those cases where, in spite of present profits being maintained, there is a prospect of their falling in future. It will be seen, therefore, that the value of goodwill is bound up with both past and estimated future profits and the means of earning them. A consideration of an example may help to make these points clearer.

Suppose that in 1934 Mr. Starter commenced business with a capital of £5000, but that a year later his Balance Sheet in spite of Drawings of £500, read as follows—

Liabilities	£	*Assets*	£
Capital A/c	5500	Fixed Assets (not including goodwill) . . .	4500
Creditors	500	Circulating assets . .	1500
	£6000		£6000

Had the proprietor not withdrawn £500 for his private use, the capital would have been £6000. This sum represents an increase of £1000, which we may regard as the profit made during the year, a return of 20 per cent on the original investment.

At this stage we might think of Mr. Starter considering the introduction of another person as partner or the sale of the business. If he introduced a partner, he is in fact selling a part of the profit-making concern which he has built up. On what terms may a partnership be formed—assuming the new partner has only £2500 capital? The terms apart from the agreed profit-sharing ratio might take one of the following lines—

(*a*) The capital of £2500 to be credited to the new partner and no other entry made.
(*b*) The capital of £2500 to be credited to the new partner and a further sum, say £500, credited to A. Starter.
(*c*) The capital of £2500 to be credited £2000 to the new partner and £500 to Starter.

Assuming an agreement was entered into the Balance Sheets in the three cases would read—

Case (a)

	£		£
Capital A/cs:		Fixed Assets	4500
A. Starter	5500	Circulating Assets . .	1500
N. Partner	2500	Bank	2500
Creditors	500		
	£8500		£8500

Case (b)

	£		£
Capital A/cs:			
A. Starter	6000	Fixed Assets	4500
N. Partner	2500	Goodwill	500
Creditors	500	Circulating Assets . .	1500
		Bank	2500
	£9000		£9000

Case (c)

	£		£
Capital A/cs:			
A. Starter	6000	Fixed Assets	4500
N. Partner	2000	Circulating Assets . .	1500
Creditors	500	Bank	2500
	£8500		£8500

In case (*a*) it will be seen that the method adopted involves no entries in the Ledger beyond the debit to the Bank Account and the credit to the new Capital Account. No Goodwill Account is opened, and N. Partner is not paying any sum in respect of it. Possibly the share of profits retained by A. Starter may be correspondingly higher to correct this omission. Whereas, in the second case, though the above entries are repeated two further ones are made. A Goodwill Account is opened with a debit balance of £500 and a similar sum is credited to A. Starter's Capital Account. This credited sum might be withdrawn by Starter or allowed to remain in the business and earn interest. An intermediate position would have arisen had N. Partner paid Starter £500 privately and put £2000 into the business banking account. Were this done, his capital would naturally be £2000. In case (*c*) the premium has been passed through the books and, though no Goodwill Account has been raised, we may reasonably argue that the credit to the senior partner's Capital Account has been made in respect of it. It will be seen that in the last two cases the older partner has benefited because he had been prepared to share the profit-earning capacity of the business with another person.

Assume that in the first year of the partnership a net profit of £1600 was made, that interest on capital at 5 per cent was to be charged against it and that the shares of profit were to be in the ratio of 3 to 1.

PROFIT AND LOSS ACCOUNT

Dr.				*Cr.*
	£	£		£
To Int. on Capital:			By Balance	1600
A. Starter . .	£300			
N. Partner . .	100			
		400		
Current accounts:				
A. Starter . .	900			
N. Partner . .	300			
		1200		
		£1600		£1600

These figures, based on the capital accounts as shown in (*c*), show both partners earning a 20 per cent return on their capital balances. If the disparity in the shares of profit is reduced, it will be at the expense of Starter. The terms assumed above are very favourable to the incoming partner and it is probable that Starter might insist on a higher premium or an even greater proportion of the distributed profits.

We may now turn to the second possibility suggested above—that Starter might sell his entire business to another person, partnership or limited company. Reference to the Balance Sheet of Starter shows that there are assets valued at £6000 and creditors estimated at £500. It will be evident that the lowest price the business would be sold for is the net value of the assets, i.e. £5500. The vendor would, in all probability, ask a much higher price. Assuming that the purchase price was agreed at £6500, the Balance Sheet of the concern under its new management would read—

Liabilities	£	*Assets*	£
Capital	6500	Fixed Assets . . .	4500
Creditors . . .	500	Goodwill	1000
		Circulating Assets . .	1500
	£7000		£7000

The student will see that goodwill equals the purchase price less the value of the assets plus the liabilities. If the business, whose earning capacity has not been increased by the inclusion of goodwill, earns for its new proprietor £1000, this represents a return of just over 15 per cent. Had Starter obtained £8500 for his business, the goodwill would have been £3000 and the return on the investment, assuming the same profit, would have been under 12 per cent. It will be clear that as the purchase price and goodwill increase, the percentage return to the buyers will fall. It is true that a change of owners may result in higher profits and thus tend to increase the percentage return. Thus the desire of Starter to sell for the highest price obtainable will be off-set by the purchaser's knowledge of a lower percentage return. The buyer is obviously unlikely to purchase a business in which he has to work for a return he might obtain by investing in stocks and shares. The enterprise must offer him an opportunity of earning such additional profit as he considers reasonable in view of the time devoted to the business and the risk incurred. If the normal rate of dividend on a safe investment is 5 per cent, then the price paid for goodwill is the present value the buyer is prepared to give for the opportunity to earn a net profit in excess of this percentage.

The purchasers, though taking over the fixed and circulating assets at the stated figures, can adjust these values to amounts which they consider more reasonable. For example, the fixed assets could be written down by £400 and the circulating assets

written up by £150. When the credit of £400 and the debit of £150 are made there has been a net fall in the debit balances of £250 which is made good by an addition of £250 to goodwill. The asset side of the Balance Sheet would then read—

	£	£
Fixed Assets	4500	
Less Revaluation	400	
		4100
Goodwill		1250
Circulating Assets	1500	
Add Revaluation	150	
		1650
		£7000

In this case the purchase price of goodwill has been increased to suit the convenience of the buyers but the earning capacity of the business is unaltered. The same could be said if the adjustment of asset values resulted in a fall in the value of goodwill. A limited company may take over a business prior to the date of the company's incorporation. If a loss is incurred in the period prior to incorporation, the amount of such a loss must be added to the figure of purchased goodwill.

It has been shown that the value placed upon goodwill though indirectly connected with past profits is more intimately concerned with future profits. But the value of purchased goodwill is based on data available when the estimate was made. Subsequent events might prove the estimate to have been a too sanguine one and the value of the assets was over-estimated. Even if we assume an accurate estimate to have been made at the time of purchase it is only true for the data we possess at that moment. Thus, if the goodwill stated in the Balance Sheet is to be kept at an accurate figure, adjustments may prove necessary from time to time.

When a limited company purchases goodwill it may pay the vendors by a transfer of ordinary shares, redeemable preference shares or debentures. Assume goodwill was purchased for £10,000 and paid for by the proceeds of an issue of 10,000 £1 ordinary shares. The Balance Sheet entries, in respect of the transaction, after payment was made would be—

	£		£
Issued Capital: 10,000 Ordinary Shares of £1 each. . .	10,000	Goodwill . . .	10,000

In this case the form of payment has created a permanent liability for the company on account of an asset whose value need not be fixed in the future at the amount stated. Any adjustments diminishing the value of the goodwill must be made by transfers of profit, a proceeding for which shareholders will be disinclined to sacrifice dividends.

Suppose that payment is made by means of the proceeds of an issue of 10,000 £1 ordinary shares at a premium, say of 2s. 6d. per share. The Balance Sheet would then read—

Issued Capital:	£		£
10,000 Ordinary Shares, £1 each . . .	10,000	Bank	1,250
Share Premium Account .	1,250	Goodwill	10,000

It will be seen that in this example the working capital of the buyers is greater by £1250 and the same amount is standing to the credit of the Share Premium Account. This balance may be transferred to the Goodwill Account, thus writing it down to £8750. If the vendors are prepared to accept in payment ordinary shares at a premium, then the number of shares so issued will be less. For example, to pay for goodwill valued at £9000 with shares issued at £1 2s. 6d. would only require 8000 shares.

The issue of debentures, however, presents new features since arrangements may be made for their redemption. Assume an issue of 100 bonds of £100 each to be made—the creation of a debenture redemption fund and the accumulation of investments representing the accumulated profits. Before the repayment of debentures the Balance Sheet would show—

	£		£
Debentures . . .	10,000	Debenture Redemption Fund Investments. .	10,000
100 bonds of £100 each .		Goodwill	10,000
Debenture Redemption Fund	10,000		

On the realization of the investments cash is available to repay the debenture-holders. The Debenture Redemption Fund is closed by converting the credit balance therein into a General Reserve. This amount is available to write off the goodwill entirely. To do this, shareholders have foregone in dividends the amounts debited to the Company's Appropriation Account and credited to the Redemption Fund.

Where an issue of redeemable preference shares is made the entries in the Balance Sheet would read—

	£		£
10,000 5% Redeemable Preference Shares of £1 each (redeemable on or before 1st Jan., 1946) . .	10,000	Goodwill	10,000

Under Sect. 46 of the Companies Act, 1929, it is laid down that where such shares are redeemed otherwise than out of the proceeds of a fresh issue that a sum equal to the amount applied in redemption must be transferred to a Capital Redemption Reserve Fund. Thus, if the shares in the above case are redeemed out of profits, then the entry on the liability side of the Balance Sheet after redemption becomes—

Capital Redemption Reserve Fund £10.000

If the issue is redeemed half out of profits and half from the proceeds of a fresh issue, say of ordinary shares, the entries would be—

	£
5000 Ordinary Shares, £1 each	5,000
Capital Redemption Reserve Fund . . .	5.000

Two facts of importance follow. First, the balance in a Capital Redemption Reserve Fund must have been transferred from the undistributed profits of the concern. Second, the Reserve Fund balance becomes virtually paid-up capital and is not available for subsequent distribution in the form of dividend.

It will be seen that prior to redemption the above shares will cost the company a maximum dividend of £500 annually which charge is lessened or ceases as the shares are redeemed in part or in whole. The goodwill may then be said to be represented by the Reserve Fund and any amount received for it in the event of its sale is available for shareholders, subject to the claims of the company's creditors.

CONTINGENT LIABILITIES

The inclusion of items on the liabilities side of a Balance Sheet implies that the sums which form that half of the statement are owing by the organization either to external parties or to the proprietors themselves. Credit balances in the concern's books represent the actual liabilities, under these two heads, existing at the date of the Balance Sheet. There is, however, another class of liabilities which need not be stated in the Balance Sheet, but whose amount and importance merit their inclusion, if a true view of the present and future positions is to be obtained. This type

of liability is termed contingent, and, if it is stated in a Balance Sheet, is not added to the existing actual liabilities. A contingent liability is a sum which may crystallize into an actual liability if a particular event occurs. Thus there is an element of doubt and uncertainty in each case, for the possibility of such a liability becoming an actuality depends on external factors over which the concern may have no control. It will be noted that some decision has been made or action taken in the past which makes such a liability possible. A contingent liability may be estimated, and an equivalent sum appropriated from profits to guard against such a possible contingency. Naturally, in a case where such a credit entry is made in a reserve account, the reserve will appear in the Balance Sheet as the company is liable to its shareholders for the sum transferred. Alternatively no amount may be transferred to reserve but the liability is noted on the Balance Sheet without figures being inserted in the effective column.

Suppose A draws a bill for £500 on B, one of his debtors, and discounts the bill at his bankers for £495. If, at the time A draws up his Balance Sheet, the bill has not fallen due for payment by B, then a contingent liability for £500 should be noted on A's Balance Sheet. The reason for this is that should B default then the bank will claim the return of £500, as A was the drawer of the bill. When a company has been unable to pay the dividends on its cumulative preference shares this contingent liability becomes an actual one if and when profits are subsequently earned. Again, a firm OP Ltd. may invest some of its surplus capital in the shares of LM Ltd., for example 10,000 £1 shares of which 15s. has been called. Now the directors of LM Ltd. may decide to make a final call of 5s. per share and, in this event, OP Ltd., in common with other shareholders, would be called upon to pay the amount of uncalled capital on their holding of LM Ltd. shares. The contingent liability in this simple illustration is only £2500 but in a recent case the sum involved exceeded £750,000.

An important group of contingent liabilities of which examples are to be found frequently in limited company Balance Sheets are those arising out of the practice of a concern giving a guarantee to its own employees or to an associated or subsidiary company. Examples of this type are—

1. The guarantee of an employees pension fund, or of the deposits of its employees in a bank.
2. The guarantee of hire purchase agreements of another company, which have been discounted with a finance company.
3. The guarantee of share dividends or debenture interest of an associated company or the obligation to purchase shares in a subsidiary.
4. The guarantee of premiums payable on the redemption of shares in subsidiary companies allocated to employees.

5. The guarantee of a bank overdraft or the debentures themselves of a subsidiary or associated company.

In each of these cases the sum involved may be of such considerable magnitude that, in the event of dividends and interest not being paid, or hire purchase agreements not being implemented, the drain on the guaranteeing company's resources may be of a serious character. The necessity of making a sudden and large payment may alter the liquid cash position of a firm to such an extent as to necessitate a material change in its own policy and programme.

REVISION TEST

Section 1

You should state whether, in your opinion, the following statements are true or false. Do not guess. You score two marks for a correct answer but will lose one mark for an inaccurate one.

1. An increase in an asset is recorded by debiting the account of the asset.
2. To diminish a liability, credit the account recording the liability.
3. When a creditor is paid, one asset is diminished and another increased.
4. When you receive cash from a debtor, one asset is increased and another is diminished.
5. In every case where a firm's capital has increased, profit must have been made.
6. A Trial Balance proves that the Ledger accounts are correct.
7. Initial stock plus purchases and gross profit equal sales and closing stock.
8. If a firm's expenses do not exceed its gross profit a net loss has been sustained.
9. A former proprietor of *The Times* when shown a Balance Sheet remarked how strange it was that both totals were the same.
10. When a firm's capital is deducted from its assets the result equals its liabilities.

Section 2

You should state whether, in your opinion, the missing word in the following statements is "understated" or "overstated." The rules for scoring are the same as in Section 1.

1. In stating that his business assets were valued at £3000, his creditors £300, and his capital £2400, a man —— his capital.
2. If a buyer did not deduct trade discount from his purchases, his liabilities would be ——.
3. A trader's closing stock is really worth only £540, but he includes it in his Trading Account as £570 and his gross profit is —— in consequence.

4. In a business where an adequate Bad Debt Reserve is £200, the proprietor insists on reserving £300, as a result of which his net profit is ——.

5. When the allowance for depreciation is inadequate to provide for replacement, profits are ——.

6. Profits are —— when no adjustment is made for insurance premiums paid in advance.

7. If a grocer bought a delivery van and debited its cost to his Purchases Account, his gross profit would be ——.

8. Profits are —— if additions to plant are debited to the Profit and Loss Account.

9. If in making a partial payment a debtor deducts discount to which he is not entitled the remaining balance in the personal account is ——.

10. A sum received in respect of a debt previously written off was credited to the debtor, therefore the net profit was ——.

Section 3

Insert such words in the blank spaces in the following sentences as will make the whole accurate statements.

1. Every asset is recorded in the Trial Balance as a ——.

2. Credit entries in a Trial Balance must represent —— balances in the Ledger.

3. The balance of the Rent Received Account is a —— one.

4. Goodwill is a —— asset whereas Stock in Hand is a —— asset.

5. When the debits in a Profit and Loss Account do not exceed the credits, the balance is a —— balance and is termed ——.

6. Additional purchases from —— increase the firm's ——.

7. Capital is —— by drawings and —— by interest on capital.

8. Excessive depreciation results in assets being —— and profits being ——.

9. The credit entry for stock in the —— Account is —— by a debit entry in the —— Account.

10. A contingent liability —— lessen a firm's divisible profit.

Section 4

From the Balance Sheet given on page 97 calculate the answers to the questions given.

1. What is the total of Sanders' circulating assets?

2. What ratio do these circulating assets bear to the current liabilities?

3. What is the book value of Sanders' fixed assets?

4. If the Bad Debts Reserve had been increased to £150, what would the net profit have been?

5. If the depreciation on plant were halved, what would the balance of the Capital Account be?

6. If one-fifth of the stock were stock for £650, what would the Capital Account balance be?

7. What is the working capital of A. Sanders?

Balance Sheet of A. Sanders
As at 31st December, 1935

Liabilities	£	£	*Assets*	£	£
Creditors		1600	Cash	60	
Loan		700	Bank	540	
Capital a/c					600
Bal. 1st Jan. . .	6000		Debtors . . .	2000	
add Net Profit .	650		*less* B.D. Reserve .	100	
					1900
	6650		Stock at cost . .		2500
less Drawings .	950		Plant . . .	3000	
			less Depreciation .	300	
		5700			2700
			Goodwill		300
		£8000			£8000

8. Does Sanders appear to be a prudent business man?

9. Assuming that the balance of creditors does not include £50 which Sanders owes for rates what should his net profit be?

10. If the market value of stock is £2300, what should the net profit be?

CHAPTER 11

LIMITED COMPANIES' BALANCE SHEETS

As the requirements of the Companies Act, 1929, which came into force on the 1st November of that year, are of such an important nature, it is worth while to give those sections which relate to accounts. A statutory obligation is placed on directors to keep specified accounts whereas formerly their duty to do so was a matter of common law.

By Sect. 123 (2) of the Act, the directors of a company must cause to be made out, in every calendar year, and to be laid before the company in general meeting, a Balance Sheet as at the date to which the Profit and Loss Account, or the Income and Expenditure Account, as the case may be, is made up. There must be attached to every such Balance Sheet a report by the directors with respect to the company's affairs, the amount, if any, which they recommend should be paid by way of dividend. This report must also state the amount which the directors propose to carry to the Reserve Fund, General Reserve or Reserve Account shown specifically on the Balance Sheet or to be shown on a subsequent Balance Sheet.

Under Sect. 124 of the same Act, there is the obligation that the Balance Sheet of every limited company must contain—

(1) a summary of the authorized share capital and of the issued share capital of the company, its liabilities and its assets, together with such particulars as are necessary to disclose the general nature of the liabilities and of the assets of the company and to distinguish between the amounts respectively of the fixed assets and of the floating assets, and a statement as to how the values of the fixed assets have been arrived at, and

(2) There shall be stated under separate headings in the Balance Sheet so far as they are not written off—

(*a*) the preliminary expenses of the company; and

(*b*) any expenses incurred in connexion with any issue of share capital or debentures, and

(*c*) if it is shown as a separate item in or is otherwise ascertainable from the books of the company, or from any documents in the possession of the company relating to the stamp duty payable in respect of any such property, the amounts of the goodwill and of any patents and trade-marks as so shown or ascertained.

(3) Where any liability of the company is secured otherwise than by operation of law on any assets of the company, the Balance Sheet shall include a statement that that liability is so secured, but it shall not be necessary to specify in the Balance Sheet the assets on which the liability is secured.

In Sect. 125 it is enacted that where any of the assets of a company consist of shares in, or amounts owing (whether on account of a loan or otherwise) from a subsidiary company or subsidiary companies, the aggregate amount of those assets, distinguishing shares and indebtedness, shall be set out in the Balance Sheet of the first-mentioned company separately from all its other assets. Where a company is indebted, whether on account of loan or otherwise, to a subsidiary company, the aggregate amount of that indebtedness shall be set out in the Balance Sheet of that company separately from all its other liabilities.

The following section, which also deals with holding companies, requires that there shall be annexed to the Balance Sheet of the holding company a signed statement stating how the profit and losses of the subsidiary company or the aggregate profits, in the event of there being two or more subsidiaries, have, so far as they concern the parent company, been dealt with in the accounts of that concern. In particular the statement must show how and to what extent provision has been made for the losses of a subsidiary company either in the accounts of that company or of the holding company or of both. Also in arriving at the profits and losses of the holding company, its directors must show to what extent they have taken into account the losses of a subsidiary concern. This section does not necessitate that the actual amount of any such profits or losses must be specified or that any part of them has been dealt with in any particular manner.

In Sect. 128, it is required that the amounts of any loans made by a company or by a person under a guarantee of the company to a director and any amounts repaid must be shown. This applies to loans still outstanding at the date of the Balance Sheet but companies whose business it is to lend are exempt from this provision.

If a loan does not exceed £2000 and is made in accordance with any practice adopted by the company with respect to loans to its employees it, too, is exempt. The accounts must state the total amount paid to the directors as remuneration for their services, inclusive of all fees and percentages, but a managing director's remuneration is excluded from this provision as is also the amount of salary received by any other director.

Finally, five other sections referring to Balance Sheet items must be given. "Where a company has paid any sums by way of commission in respect of any shares or debentures, or allowed any sums by way of discount (*a*) in respect of any debentures, the total amount so paid or allowed, or so much thereof as has

not been written off, shall be stated in every Balance Sheet of the company until the whole amount thereof has been written off." (Sect. 44 (i).) Under Sect. 45 (2) the aggregate amount of any outstanding loans made in connexion with schemes for the purchasing of fully-paid shares in the company by employees must be shown as a separate item in every Balance Sheet of the company. This provision applies where the loan is made to trustees who are to hold the shares for the benefit of employees or of any salaried director. Sect. 46 requires that a company, which issues redeemable preference shares, must include in each Balance Sheet a statement specifying what part of the issued capital consists of such shares and the date on or before which those shares, are, or are to be liable, to be redeemed. The same section says "where any such shares are redeemed otherwise than out of the proceeds of a fresh issue, there shall out of profits which would otherwise have been available for dividend be transferred to a Reserve Fund, to be called 'the Capital Redemption Reserve Fund,' a sum equal to the amount applied in redeeming the shares." It should be noted, in passing, that where redemption involves the payment of a premium, this premium must have been provided out of the profits of the company before the shares are redeemed. The issue of a share at a discount, which is permissible under Sect. 47, involves the statement in every subsequent Balance Sheet of the particulars of the discount allowed on the issue or of so much of that discount as has not been written off. Lastly, Sect. 75 (3) lays down that where a company has power to re-issue debentures which have been redeemed, particulars with respect to the debentures which can be so re-issued shall be included in every Balance Sheet of the company.

The requirements of the Companies Act, in so far as they refer to accounts and the Balance Sheet, have been dealt with, and it is now necessary to refer to particular aspects of company Balance Sheets.

A first glance at the Balance Sheet of a public limited company will disclose many items with which the student is familiar and a number which he has not previously met. It is this latter group which will be dealt with first, though the student is reminded that the greater complexity of a Balance Sheet or the presence of unfamiliar items in it, does not alter the essential principles upon which it has been built. Those items on the right-hand side represent the company's assets and other debit balances which exist in its ledgers, and on the left side a statement of the credit balances in the ledgers or the claims against the firm's property.

SHARE CAPITAL

The capital of a public limited company is built up of units called shares, subscribed for by a minimum of seven persons or as many as the 124,000 of Imperial Chemical Industries Ltd. Ownership may thus be vested in the hands of many, in contrast to that of the sole trader and partnership already considered. But control and direction, as in the case of smaller concerns, is retained in the hands of a comparatively small number of persons. The number of units held by individuals will vary according to their ability to purchase or obtain them, so that it becomes both undesirable and impossible to give in detail the name and holding of each shareholder. In consequence, in so far as it refers to one class or type of share, the capital is expressed as one amount. Where the share capital comprises three different kinds of shares, there will be three separate sums given in the Balance Sheet. There are further contrasts between the capital structure of the simpler business units and the limited company. The amount of capital a sole trader may sink in his business is limited by his private resources and what he considers essential for its efficient functioning. On the other hand, the authorized capital of a company is fixed by its Memorandum of Association and where a company may wish to increase the figure it will take powers in its Articles of Association to do so or alter its Articles for this purpose. Similarly a reduction of capital may be effected according to the provisions of the Articles and confirmed by an order of Court. In view of this and the likelihood of increased capital requirements as time passes, a company may decide that for example, of its capital of £50,000 only £12,500 is needed when it commences operations. Lastly, as the public cannot be compelled to subscribe for shares, it follows that those directing the company may not be able to attract the amount of capital they would desire. In contrast, other enterprises with brighter prospects of ultimate profits may find that the demand for their shares is greater than they can satisfy. The consideration of an extract from the liability side of an imaginary company Balance Sheet may make these points clearer.

	£	£
Authorized Capital:		
100,000 6% Preference Shares of £1 each	100,000	
200,000 Ordinary Shares of £1 each	200,000	
		300,000
Issued and Paid-up Capital:		
100,000 6% Preference Shares of £1 each, fully paid		100,000
160,000 Ordinary Shares of £1 each, 15s. called	120,000	
Less calls in arrear	200	
		119,800

From these figures it will be seen that the present maximum capital which the company may issue is £300,000; that each of its shares is £1 and that the preference shareholders are entitled to a 6 per cent dividend before any distribution of profit is made to the ordinary shareholders. Turning to the issued capital it will be seen that all the preference shares have been disposed of and that no sums are due from shareholders in respect of them. At this point it might be noted that this does not imply that the company has received £100,000 cash in respect of these shares, since some of them may have been given for services rendered to the company or for assets transferred to it. Of the ordinary shares 40,000 remain unissued in the hands of the company which, at the moment, has only required the ordinary shareholders to pay 15s. for each share held. The remaining 5s. per share is a contingent liability borne by every shareholder, and, apart from its assets, the company's uncalled capital forms the only security for the firm's creditors. Finally, one or more shareholders have been unable to pay the full 15s. per share and still owe, in all, £200. We may now consider as to how far the company may increase its capital. Firstly, it may make a further call of 5s. on the ordinary shares and raise the £119,800 to £160,000, subject to any calls in arrear.

Secondly, it might find buyers for the £40,000 unissued capital, but this will depend on the willingness of the public to regard the share either as a dividend-earning investment or a profit-earning speculation.

The attractiveness of a share as a speculation or an investment depends on two main factors—

(*a*) the present price of the share in relation to its possible future price and;

(*b*) the chance of high and continued dividends.

Shares of limited companies are issued at prices above, equal to, or below their nominal values; that is, at a premium, at par, or at a discount. At the moment we are only concerned with the price of shares as between a company and its shareholders, and as an example, the issue of 1000 £1 ordinary shares will be considered. Let us assume that these shares are issued respectively at (*a*) £1 2s. 6d., (*b*) £1, and (*c*) 19s.

Example (*a*). Issue at a premium.

BALANCE SHEET

Issued Capital:	£		£
1000 £1 Ordinary shares .	1000	Bank	1125
Share Premium A/c .	125		
	£1125		£1125

The cheques received for 1000 shares at £1 2s. 6d., £1125, would be debited to the Bank Account. As £1000 is credited to the Ordinary Share Capital Account, there remains to be recorded a further liability of £125. This sum is credited to a Share Premium Account, and it represents a capital profit made by the company.

Example (*b*). Issue at par.

BALANCE SHEET

Issued Capital:	£		£
1000 £1 Ordinary Shares .	1000	Bank	1000

This example calls for no special comment since the final credit balance of the Share Capital Account equals the debit balance in the Bank Account.

Example (*c*). Issue at a discount.

BALANCE SHEET

Issued Capital:	£		£
1000 £1 Ordinary Shares .	1000	Bank	950
		Share Discount A/c . .	50
	£1000		£1000

In this case the company only receives 19s. per share issued from its shareholders or a total sum of £950. To balance the credit of £1000 in the Share Capital Account, common to all the examples, there is a debit of 1000 × 19s. or £950 in the Bank Account. There is, therefore, a further debit balance of £50 to be recorded and this is made in a Share Discount Account. This balance of £50 (1000 × 1s.) represents the capital loss incurred by the company in making an issue at a discount. A loss of this type must be recorded in each of the company's subsequent Balance Sheets as a fictitious asset until such time as it has been extinguished by a transfer of £50 profit.

Where companies issue shares for which payment is made at intervals some shareholders may be in arrears whereas others may have paid in advance. Shareholders who, at the date of the Balance Sheet, have not paid the sums due by them are debtors of the company. The amounts owing are not shown among the assets but are deducted from the issued capital. Conversely, sums paid in advance are added. Suppose a company had issued 10,000 ordinary shares of £1 each, 15s. called. One shareholder owning 100 shares had not yet paid the last call of 2s. 6d. and

another holding a similar number had paid in full for his holding. The Balance Sheet entry would be—

BALANCE SHEET

Nominal Capital:				£		
10,000 Ordinary Shares of £1 each				10,000		
Issued Capital:	£	s.	d.	£	s.	d.
10,000 Ordinary Shares	7500	–	–			
£1 each. 15s. called						
add Calls in Advance	25	–	–			
	£7525	–	–			
less Calls in Arrears	12	10	–			
				7512	10	–

Under the Companies Act, 1929, the issue of a new type of share became possible. This was a redeemable preference share which had to be issued as such and was only to be redeemed when fully paid. Redemption can be made in two ways: either by the proceeds of a new share capital issue or by funds representing profits retained within the business. Where the first of these alternatives is adopted, the practical result is to substitute one class of shares for another. When the shares are redeemed out of profits then a sum equal to the amount so applied must be transferred from profits to a special account known as a Capital Redemption Reserve Fund. Once created, this Reserve Fund is treated as paid-up capital for it cannot be distributed as profit to shareholders though it may be used to convert partly-paid shares into fully paid ones.

Suppose that the liabilities side of a Balance Sheet contained the following items—

	£
20,000 6% Redeemable Preference Shares of £1 each (redeemable on or before 31st December, 1945)	20,000
Balance of P. and L. A/c	16,000

Assume that the company redeemed these shares by the proceeds of an issue of 15,000 ordinary shares of £1 each and £5000 drawn from its own resources. After the issue and redemption had taken place the relative entries would be—

	£
15,000 Ordinary Shares of £1 each	15,000
Capital Redemption Reserve Fund	5,000
Balance of P. and L. A/c	11,000

LOAN CAPITAL

Limited companies may and frequently do obtain capital from other sources than their shareholders. Apart from loans from

banks negotiated on the security of the concern's assets sums may be borrowed from the general investing public in the form of debentures. Thus, debenture-holders are in the position of creditors of the firms to which they have advanced money, and they have no control over the company's affairs except when their security is endangered by the company's policy. Their position entitles them to the payment of interest in respect of the loans and not to a share of any profits which may be available.

It follows, therefore, that the debenture interest forms a prior and fixed charge which must be met from the firm's revenues before shareholders of any class receive dividends. Provision for debenture interest unpaid at the date of balancing must be made in the Profit and Loss Account and the amount outstanding appears as an added liability in the Balance Sheet. Debentures, normally of higher amounts than share values, may be issued at a premium, at par, or at a discount. The resulting Debenture Premium and Debenture Discount Accounts will appear in the Balance Sheets and, naturally, on the same sides as was the case in the share issues given above. Appropriate references to an issue of 1000 7 per cent debentures of £100 each, issued at £97 10s., would be—

BALANCE SHEET

Liabilities	£	*Assets*	£
1000 7% Debentures of £100 each (issued at £97 10s.) . . .	100,000	Bank	97,500
		Debenture Discount A/c .	2,500
	£100,000		£100,000

In this example the annual interest charges amount to £7000 and there is a debit balance of a fictitious asset "Debenture Discount" which will, it is hoped, be written off by a transfer of £2500 profit.

A company may borrow money on the security of its assets and issue debentures as collateral security against the loan. Suppose a company has issued debentures for £40,000 to the general investing public and that it has borrowed £7500 from its bankers to whom it has advanced £10,000 debentures as collateral security. The relative Balance Sheet entries would be—

(1)

	£		
Debentures 400 bonds of £100 each . . .	40,000		
Bank Loan . . .	7,500		

or

	£		£
Debentures 500 bonds of £100 each . . .	50,000	Debenture Suspense A/c .	10,000
Bank Loan . . .	7,500		
(Collaterally secured by issue of £10,000 debentures)			

The distinction between the subscribed and loan capitals cannot be emphasized too much since, as the latter grows, the fixed charges of the firm must increase—and, in consequence, the amount of profit available for shareholders is diminished. Where capital is needed and it is not desired to broaden the basis of ownership, an issue of debentures solves the difficulty since the cost of the additional capital is accurately known. Should the prospects of expansion and good trade be excellent, such an issue of loan capital is desirable. If the period of good trade arrives, then expansion can take place and the issue be redeemed, that is repaid from the accumulated cash reserves. A concern, in such circumstances, has had the benefit of the added capital; it has carried out its programme of expansion without increasing the number of shareholders and so lessening the possible profit per share. A similar policy, though with important modifications, can be carried out by an issue of redeemable preference shares.

The principle enunciated in the preceding paragraph is capable of, and receives wider application, when the capital structure of large organizations is under consideration. Linked with the desire to retain the basis of ownership unaltered is the knowledge that it is frequently possible to borrow money at a rate which is lower than it can be made to earn in a business. Imagine that a limited company with an issued capital of £100,000 is earning a profit which enables a 10 per cent dividend to be paid. If it can borrow capital at a rate less than 10 per cent and use it as effectively then it is justified in doing so. The company's liabilities might then read—

	£
Issued Capital:	
100,000 Ordinary Shares, £1 each	100,000
500 6% Debentures of £100 each	50,000

Under these circumstances if a profit of £15,000 is made, there is a prior charge of £3000 for debenture interest but the balance of £12,000 permits of a higher dividend than 10 per cent being

paid. There is, of course, the possibility of the firm's profit-earning capacity not being maintained. Should this prove to be the case then, when profits fall below £13,000, there remains less than 10 per cent for the shareholders after the debenture-holders have been paid.

That the introduction of another type of share capital does not invalidate the above principle will be seen from the following example.

Issued Capital:	£
150,000 6% Preference Shares, £1 each	150,000
100,000 Ordinary Shares, £1 each	100,000
500 6% Debentures of £100 each	50,000

Assume a divisible net profit of £30,000.

The debenture interest payable amounts to £3000 and the dividend to the preference shareholders would be £9000; a total of £12,000 leaving a balance of £18,000 for the ordinary shareholders. Even were £3000 of this latter amount retained within the company a 15 per cent dividend could be declared on the ordinary shares. As has already been shown there is a danger point for each type of capital provided. Thus £3000 must be earned before the preference shareholders are entitled to participate, and a net profit in excess of £12,000 must be earned if the ordinary shareholders are to receive anything. Reference to the Balance Sheets of limited companies will show that in many cases the number and total value of the ordinary shares is, by comparison with the other forms of subscribed capital, low. In such cases, when the appropriation of profits takes place, the percentage return on the ordinary shares is correspondingly very high. The value of such shares naturally depends on the dividends earned and not on their nominal value.

BALANCE SHEET OF THE UP CO. LTD.

	£		£
Preference Shares . .	150,000	Assets . . .	600,000
Ordinary Shares . .	150,000		
Debentures . . .	100,000		
Creditors . . .	200,000		
	£600,000		£600,000

We might carry our consideration one step farther to arrive at the relative values of the units of capital as shown in the above Balance Sheet of the UP Co. Ltd.

	£	Times Covered	Margin £
Total assets	600,000		
Debenture-holders	100,000	6	500,000
	500,000		
Creditors	200,000	2·5	300,000
	300,000		
Preference Shares	150,000	2	150,000
	150,000		
Ordinary Shares	150,000	1	—

The security of the debenture-holders, i.e. the assets of the firm, is six times the amount lent to the company and this leaves a sum which is two and a half times the amount owing to the creditors. If in the above Balance Sheet we substituted a "P. & L. A/c. balance . . . £100,000" for the debentures we would have—

	£	Times Covered	Margin £
Total Assets	600,000		
Creditors	200,000	3	400,000
	200,000		
Preference Shares	150,000	2·6	250,000
	250,000		
Ordinary Shares	150,000	1·6	100,000

The larger margins and the greater number of times the claims of preference and ordinary shareholders are covered would make the shares in this company more valuable.

QUESTIONS

1. What advantages accrue from the requirements of the Companies Act of 1929 in so far as they refer to Balance Sheets?

2. Comment on the following extracts from the Balance Sheets of several limited companies—

(*a*) 6% First Mortgage Debenture Stock—Redeemable by annual drawings at 103% or by purchase

Authorized	£750,000
Issued	500,000

Note. A further £60,000 debenture stock has been deposited as collateral security for an associated company's bank loan.

(*b*) Contingent Liabilities—
Guarantee of dividend on 90,000 7% Cumulative Preference Shares of £1 each of the XYZ Co. Ltd.

(*c*) "Goodwill, as written down in 1929 . . £150,000."
(Balance Sheet d/d 31st December, 1935.)

(*d*) Creditors—

Sundry Creditors, Bills Payable, Accrued Charges and Reserves for Contingencies		£300,000
(*e*) Payments in Advance and Suspense Expenditure		8,000
(*f*) Stocks, Stores, Packages less Reserve		600,000
(*g*) Staff Benevolent Fund—		
As at 31st December, 1934	£3,900	
Added during year	7,000	
	£10,900	
Less Pensions and Allowances paid during year	6,700	
		£4,200
(*h*) Goodwill and Patents		£1

3. Comment briefly on the following transactions and state how they should be dealt with in preparing the Balance Sheet of a public company—

(*a*) The issue at 104 of £1,000,000 4 per cent debentures, repayable at par in fifteen years.

(*b*) The loan of £1000 at 5 per cent per annum to a director. The loan was for three months, and was repaid before the date of the Balance Sheet.

(*c*) The redemption out of profits of 50,000 7 per cent preference shares of £1 at a premium of 2s. 6d. *R.S.A.*

4. Discuss the following extract from an auditor's report "the investments in Subsidiary and Associated Companies possess, in the aggregate, a value largely in excess of the figure shown in the Balance Sheet."

5. A friend of yours is considering whether he should invest £2000 in a private company and asks your advice. He is prepared to subscribe for ordinary shares or 5 per cent debentures. When handing you the last Balance Sheet, which is dated 30th June, 1933, he states that the dividends on the ordinary shares have been as follows—

Year ended

30th June, 1931	8 per cent
,, 1932	10 per cent
,, 1933	5 per cent

State concisely the points to which you would give special attention and mention any matters on which you would require information.
R.S.A.

6. A company has issued 1000 5 per cent debentures of £100 and has created a Debenture Redemption Fund of £30,000 by setting aside a fixed annual sum out of profits. A substantial line of these debentures being on offer in the market, the directors decide to purchase for cancellation 200 debentures at 98.

Show how the Balance Sheet of the company would appear after the completion of this transaction, and state how the profit on redemption should be dealt with, giving your reasons. *R.S.A.*

7. Under the heading of "Reserves" an English Company shows the following: General Reserve, Share Premium, Debenture Redemption, Income Tax, Equalization, and Staff Bonus and Pensions. Define the purpose for which each of the above reserves was created.

CHAPTER 12

PROFITS—INNER RESERVES

PROFITS

The treatment of profits and losses in the accounts of limited companies differs from that adopted by the sole trader or partnership, since both the constitution of the firm and the legal requirements are different. We have seen that profits and losses both of sole traders and partnerships are added to or deducted from the capital or current accounts of the proprietors. This is impossible in the case of limited companies so that an Appropriation Account is introduced, with the twofold aim of separating the balance of the revenue account from capital, and of showing the manner in which division of such profits is made.

Appropriation Account

Dr. *Cr.*

1935		£	1935		£
Dec. 31	To P.S. Dividend	3,000	Jan. 1	By Balance .	6,000
,, 31	,, O.S. ,,	6,000	Dec. 31	,, P. & L. A/c .	12,000
,, 31	,, Income Tax .	2,000			
,, 31	,, Superann. Fund	1,000			
,, 31	,, Reserve A/c .	3,000			
,, 31	,, Balance. .	3,000			
	£	18,000		£	18,000
			1936		
			Jan. 1	By Balance .	3,000

In this Account it is seen that the balance of undistributed profit which remained at the end of 1934 was £6000. To this is added the balance of the company's 1935 Profit and Loss Account after all operating expenses, debenture interest, and depreciation have been charged. Neither of these items, be it remembered, needs to be represented by equivalent bank or investment balances. The company, therefore, has an amount of £18,000, the distribution of which is a matter for the decision of the board of directors, subject to the views of the shareholders entitled to vote at the General Meeting. Directors faced with this problem have to bear in mind the natural desire of shareholders to receive dividends, and the future needs of the company. Possible extensions in the near future, the likelihood of adverse trade

conditions ahead, the desirability of launching an expensive advertising campaign, and the smallness of bank balances in hand, are all factors which militate against the payment of dividends. The above illustration, however, shows that dividends to the preference and ordinary shareholders have been decided upon and these with the item for Income Tax Account for £11,000 leave a balance of £7000. An employees' superannuation fund has been established to which is transferred a further £1000. This sum, together with the two remaining items, represents profit retained within the company; but the superannuation fund will be diminished as and when employees are paid the pensions to which they are entitled. In the Balance Sheet for 31st December, 1935, the superannuation fund, the reserve and the Profit and Loss Account balances will appear as liabilities.

APPROPRIATION ACCOUNT

Dr. *Cr.*

1936		£	1936		£
Dec. 31	To P. & L. A/c . Transfer of Net loss .	6800	Jan. 1	By Balance .	3000
			Dec. 31	,, Reserve A/c	3000
			,, 31	,, Balance .	800
		£6800			£6800
1937					
Jan. 1	To Balance. .	800			

For the second Appropriation Account it has been assumed that during 1936 the company's operations resulted in an adverse balance in the Profit and Loss Account of £6800. The balance of £3000 brought forward from 1935 offsets nearly half the loss, and the transfer from the Reserve Account of the surplus £3000 reduces the debit balance to one of £800. This debit balance will naturally appear on the asset side of the Balance Sheet until it can be wiped out by profit. It resembles the debit balance of a partner's current account in that it is related to capital, but differs since the Appropriation Account is a nominal and not a personal account. Further the partner's debit balance will be extinguished by a transfer of his own share or fraction of the subsequent profit earned, whereas all the profit earned can be employed to reduce the Appropriation Account balance.

Reference to the normal directors' report published for the use of shareholders will show features that call for comment, so that a report and a Profit and Loss Account of an English company, in which the figures and dates have been modified. is given below.

The directors have pleasure in submitting herewith the Accounts of the Company for the year ending 31st December, 1933—

	£	£
The profits, after providing for Depreciation, Income Tax and after adding Interest and Dividends on Investments, amounted to		139,000
To which is added the balance brought forward from last year		43,000
		182,000
After deducting payment of the half-year's dividend to the 30th June, 1934, at 7½% per annum, less tax on Preference Shares	17,000	
and an interim dividend of 2½%, less tax for the year ending 31st December, 1933 on the Ordinary Shares	12,000	
		29,000
		153,000
And transferring to:		
General Reserve	38,000	
Staff Benevolent Fund	6,000	
		44,000
There remains a balance as per Balance Sheet of:		109,000
From this sum there has been paid the final Dividend for the half-year ending 31st December, 1933, on the Preference Shares at 7½% per annum less tax the sum of		17,000
Resulting in a balance available for distribution .		92,000
Which the Directors recommend should be applied as follows—		
Payment of a final dividend for the year ending 31st December, 1933, on the Ordinary Shares of 5% (making 7½% for the year) less tax	23,000	
and a cash bonus of 1½% less tax	7,000	
		30,000
Leaving a balance to be carried forward to next year's account		£62,000

Profit and Loss Account

Dr. For the Year ending 31st December, 1933 *Cr.*

	£		£
To Directors' Remuneration	16,000	By Trading Profits after making provision for Depreciation and other Reserves	233,000
,, Legal Expenses, Audit Fees, etc. . .	5,900	,, Transfer Fees . .	100
,, Debenture Interest .	24,000	,, Interest and dividends from Investments and Loans . .	8,000
,, Pensions . . .	9,000		
,, Repairs, Rates. .	1,000		
,, Income Tax . .	46,200		
,, Balance, being Net Profit . . .	139,000		
	£241,100		£241,100

An examination of the Profit and Loss Account will show that the first credit item cannot be described as gross profit since it represents the profit remaining after provision has been made for depreciation and other reserves. The wording of this item is not unusual, since the amount of operating profits and the extent of the provisions made for depreciation and reserves are not disclosed. Where a concern has subsidiary companies their losses and profits are usually incorporated in this figure so that there remains some doubt as to the actual and separate profits of the parent company and its subsidiaries. The last credit item is of value for, by reference to the investments and loans given in the Balance Sheet, an idea of the percentage return received by the company from its external investments can be obtained.

By reason of the deductions already made from gross profit on the credit side the expenses remaining to be charged are less in number, thus simplifying the account from the point of view of the printer, if not the investigator. It should also be observed that income tax is included among the charges, though it is more correctly an appropriation of profits.

The balance of this account, £139,000, is shown as the first item of the Directors' Report which thus becomes an explanation of the manner in which profits have been treated. Appreciating that at the end of the first half-year that profits permitted dividend payments, amounts have been distributed to both the preference and ordinary shareholders, leaving a balance of £153,000. Transfers to the company's general reserve and staff benevolent fund, which appear in the Balance Sheet, account for a further £44,000 leaving a balance of £109,000 which is further reduced by the payment of the second half-year's preference share dividend. The final sum of £92,000 appears in the effective column of the Balance Sheet as the liability in respect of the company's Profit and Loss Account. The Report concludes with the director's recommendations as to the payment of an ordinary share dividend and cash bonus, leaving £62,000 to be carried forward.

INNER RESERVES

Reference has already been made to the fact that Balance Sheets may not disclose the real facts which they purport to do; that they mislead competitors and perhaps shareholders. We may rule out at once those instances where the purpose for which facts are withheld is a criminal one; and confine our attention to the cases where the intention and effect is to benefit the company itself. A company Balance Sheet may be said to mislead its competitors when the picture painted shows the

position to be worse than it actually is. Were the real position worse than that stated, the Balance Sheet would be equally misleading. If rumours were not already circulating, the difficulty of obtaining an auditor's unqualified certificate would be impossible. So that the process of misleading shareholders must be accomplished by making the apparent state of the company's affairs appear to be less prosperous than is really the case. These internal reserves of strength are termed inner or secret reserves since their existence is not superficially disclosed and their amount is unknown.

Reference to the following Balance Sheet should assist in making the processes involved clearer.

BALANCE SHEET

Liabilities	£	*Assets*	£
Issued Share Capital .	100,000	Land and Buildings *less* depreciation . .	35,000
Creditors . . .	10,000	Plant and Machinery *less* depreciation . .	35,000
Appropriation A/c. .	50,000	Stock of Materials. .	35,000
		Debtors *less* Bad Debts Reserve . . .	25,000
		Investments at Cost .	20,000
		Cash in Hand and at Bank	10,000
	£160,000		£160,000

The existence of undistributed profit to the extent of £50,000 is an indication of the company's prosperous condition; so that if the real position is not to be disclosed this sum must be diminished. If a sum of £15,000 is deducted from the profit and added to the sundry creditors these latter are increased to £25,000. Were the wording of this item given as "Creditors and Sundry Credit Balances," there would be an indication of some profit being hidden in the figure of this liability though its magnitude would be unknown. Attention can now be turned to the asset side of the Balance Sheet where it is proposed to write down the Land and Buildings by a further £5000 and the Plant and Machinery by a similar amount. The Reserve for Bad Debts could be still further increased by £5000. Thus the stated values of these three assets are diminished by £15,000. If goodwill and trade-marks were mentioned in the Balance Sheet, they might be depreciated to a nominal figure or entirely written off the books. In none of the above three cases is the amount of depreciation or reserve given, though the existence of a provision is evident

from the descriptions of the assets. Secret or inner reserves to the extent of £30,000 thus exist, but if we now draw up a Balance Sheet it would appear as under—

AMENDED BALANCE SHEET

Liabilities	£	*Assets*	£
Issued Share Capital .	100,000	Land and Buildings	
Creditors and Sundry		*Less* depreciation .	30,000
Credit balances . .	25,000	Plant and Machinery	
Appropriation A/c. .	20,000	*Less* depreciation .	30,000
		Stocks of Material. .	35,000
		Debtors	
		Less Bad Debts Reserve	20,000
		Investments at cost .	20,000
		Cash in Hand and at Bank	10,000
	£145,000		£145,000

The Balance Sheet, as amended, is still that of a prosperous concern for its current assets are in the ratio of 3·4 to 1 to its current liabilities, whereas in the first Balance Sheet the same ratio was 9 to 1. After making allowance for creditors in each case, the net worth of the concern has fallen from £150,000 or $1\frac{1}{2}$ times the assets to £120,000 or $1\frac{1}{5}$ times the assets. It will be apparent that these results have been obtained by two methods—

(*a*) the understatement of assets, and
(*b*) the overstatement of liabilities.

Identically similar results can be obtained by the action of external forces over which the enterprise may or may not have any control. In both of the above Balance Sheets the stocks of materials and investments are given at the same figures. The materials, we may assume, have been conservatively valued since any increase in their valuation would have been reflected in a higher balance of profit, which as we have seen is undesirable from the company's point of view. If there has been either a definite undervaluation or a rise in stock values since the valuation was made, then a further inner reserve exists. Turning to the investments we see that a similar position exists, for we have no information as to what specific investments are held by the company. Had we these data it would be a comparatively easy matter to arrive at the current market value of the shares, etc., held. In this instance we may be sure that the investments have appreciated for, had they depreciated, their value would have been written down at the expense of the profit. The difference

then between the cost price and market value of the investments, assuming the latter to be the greater, is yet another inner reserve and secret since its amount is not disclosed. There remains the treatment of items referring to subsidiary companies, none of which appear in the above balance sheet. Thus among the assets of a limited company might appear "Shares in Subsidiary Companies" and "Loans to Subsidiary Companies." Frequently a holding company acquires shares in a subsidiary company at a comparatively cheap figure when the affairs of the latter are at a low ebb. If subsequent to the purchase of its shares the subsidiary company's position is materially improved, then the shares are more valuable since they represent assets of greater value. Where the holding company keeps these shares at their purchase price, an inner reserve is created, the computation of which is no easy matter.

QUESTIONS

1. Of an American company it was stated that although it was not currently earning profits in adequate amount yet it was able to go on paying dividends because of its depreciation reserves. Show clearly how this payment may have been made possible.

2. Comment on the following quotation from Beverley Nichols' *A Village in a Valley*. "Well read the prospectus. The preference shares, it seems, will be covered ten times." "Covered with what?" "Covered!" she snapped. "Paid for."

3. A business, the assets and creditors of which amount to £11,000 and £1000 respectively, is for sale. You are assured that the average net profits of each of the last four years are £800. State what price you would be prepared to give for this business, giving your reasons and any assumptions you may make.

CHAPTER 13

BALANCE SHEET ANALYSIS

THE study and analysis of Balance Sheets and financial statements is carried out for one or more well-defined purposes. Firstly, there is the attempt to visualize the enterprise behind the given data which is a reflex of its activities. Such activities are, however, those of human beings capable of forming good and bad judgments, and who may possess or lack the power of organizing and administrative ability. It may be said that these qualities or defects show themselves directly or indirectly in the figures relative to the business. The increase of net profits may point to good management and a faculty for making the right decision at the right moment. Alternatively, a reduction in the net profit of a concern may prove that it lacks a skilful guiding hand. Local and national business conditions, physical disasters or other external factors may be such, however, that those responsible for the management of businesses are to be congratulated on the results obtained, disappointing though these may be. Neither praise nor criticism should be given unless the human element and the attendant circumstances are remembered.

Secondly, there is the necessity that analysis should lead to the formation of a judgment as to the future possibilities of the enterprise. When asked to lend money to a business, a bank is more concerned with the safety of the loan than with the rate of interest to be charged. The desired duration and the use to which the loan is to be put must be considered in the light of the bank's own future cash basis and policy. If it is to grant a loan, a bank must have reliable current information that the money will normally be repaid at maturity.

Again, while the majority of investors may be content to rely on the advice of their banks, their friends, the financial press or a stockbroker, the minority will wish to form an independent opinion. Such opinions, based upon data obtainable from Balance Sheets, etc., may lead to judgments, and finally to the purchase of stocks and shares with good or indifferent results. In the latter event failure may be attributed to either faulty analysis or ignorance of facts not disclosed by or necessarily concerned with, the published accounts or Balance Sheet.

Again, a business house is constantly being faced with the demand for credit by its debtors. Bank references or the credit

ratings supplied by a mercantile agency may be of considerable assistance in helping the management to arrive at a decision which it will not subsequently regret. Where such a decision is based on external reports, the creditor firm is acting on the judgment formed by others, whereas, if accounts or a Balance Sheet are available, it can act on its own. It should be noted that to base one's decision even on an accurate analysis of the facts disclosed in a year-old Balance Sheet is to forget that the financial position of a business can change materially in the course of twelve months. Nor in this connexion must it be forgotten that the granting of credit to firms engaged in normal distributive channels cannot await the preparation of Balance Sheets or revenue accounts.

Before one can proceed to the analysis of a Balance Sheet or any financial statement it will be obvious that one must be conversant with the meanings of the various items. One must also appreciate the reality behind the words used. This is not difficult when tangible assets such as cash or stock are being considered, but with such items as "Goodwill" or "Profit and Loss Account Balance" ignorance may easily lead to wrong conclusions. Granted a knowledge of these items they may be considered along the following lines. Firstly, we may take each separate asset or liability and assess its importance by reference to the size and type of the business unit in whose Balance Sheet it appears. Isolated signs may be evident in a single Balance Sheet that indicate the business to be in an unfortunate position, or even in one fraught with considerable danger. A high figure for goodwill, for example, should be reflected in adequate sales at remunerative profits. Thus a low net profit continued over a period and a high valuation for goodwill are incompatible. Again, though in a time of expansion cash and bank balances tend to remain small, an unduly small balance of liquid capital is a symptom of an unhealthy condition that requires correction. The remedy may be additional capital, a more energetic policy of debt collection, or a revision of the firm's credit policy. Thus a four-figure bank balance in a comparatively small firm would occasion far less surprise than a six-figure balance of cash in hand in the case of a large bank. We would expect the value of stock on hand of a small grocer to be considerably smaller than that of a grocery chain. Secondly, we may think of each item in its relation to other items. A small cash balance, a bank overdraft, and a large amount owing to creditors, give an indication of financial difficulties. A heavy investment in fixed assets and a small credit balance of profit are evidence of a condition calling for attention and correction.

Lastly, we may consider each part in its relation to the whole. Thus, the relation that cash bears to the total assets or that stock on hand bears to the total assets are cases which may be examined.

In the case of an isolated Balance Sheet, analysis can only bring to light two sets of mathematical facts: (*a*) the actual difference between a single item or group of items and another, and (*b*) the ratio existing between two items or between one group of items and another. To illustrate this we may turn to A. Wedden's Balance Sheet (page 85) and note that his cash and bank balances, amounting to £400, exceed his liabilities to creditors by £140. He is, thus, solvent at 31st December, 1935, since he is able to pay his debts as and when they arise. Or again, we may say that the cash and bank balances plus the debtors, a total of £1200, divided by his creditors, give a ratio of 4·6 to 1.

Lest the reader be inclined to over-estimate the value of a ratio it may be well to point out some of the disadvantages attendant on its use. To extract two or more items from a Balance Sheet and calculate therefrom a ratio, may prevent a bird's eye view being taken of the whole statement. If one football team contains one international player and another team two such men, it does not follow that the latter is twice as efficient a scoring machine. Team work counts. Ratios cannot be final or absolute for their reliability may vary. Turning to the football analogy—the playing form of each of the internationals may vary from week to week. Balance Sheets ratios are an expression of the relationship existing at a particular time between two factors, both of which are variables. The ratio will change if only one variable is altered, and it will change if both are increased or decreased disproportionately. Thus, if the ratio of circulating assets to current liabilities is as 2 to 1 an increase of 50 per cent in the assets raises the ratio to 3 to 1, but naturally the doubling of both will have no effect whatever on the ratio.

Where it is possible to calculate the ratios for one particular firm for several years and also to find the ratios for the same period of other concerns of a similar character, an investigator is in a safer position. The latter set of ratios should be capable of yielding basic or standard ratios. Against these standard ratios those obtained from individual firms can be placed and the resulting comparison should yield more trustworthy judgments. Heavy seasonal trades will tend to show different ratios which may be corrected when comparison is made with a standard ratio. "Window dressing" in a Balance Sheet would be less effective in the light of such analysis. Greater uncertainty is caused by the presence in a Balance Sheet of "omnibus" items, in other words, items combining the valuations of a number of

dissimilar assets even though they are recorded separately in the firm's Ledger. If, to take an example, patents, trade-marks and goodwill are shown as one figure, we have no indication of the values placed upon each. Or, if plant and machinery values are combined with those of land and buildings, the real position is obscured though all may be classed as fixed assets. Such combination of items may be desired to mislead competitors and to disclose as little information as possible, but it may also be for the purpose of hiding a state of affairs concerning which those responsible are uneasy.

This ratio between current assets and current or short-term liabilities is one of the most widely used and normally one of the most reliable. The Companies Act requires certain assets to be stated separately in the concern's Balance Sheet; but no such obligation rests upon those responsible for the statements of sole traders and partnerships. So far we have assumed no reason to doubt the accuracy of the Balance Sheet figures; but, if uncertainty existed as to the value of debtors and other assets, it would be preferable to adjust them and so arrive at a more accurate ratio. This process of "scaling down the assets" and retaining liabilities at their stated amount, if it is to be carried out with a reasonable degree of accuracy, calls for a knowledge of, and experience in, the valuation of assets.

A further instance of the value of a ratio may be gathered from the following extracts from an imaginary Balance Sheet—

Creditors . .	£10,000	Cash	£1,000
		Debtors . . .	£3,000
		Stock. . . .	£8,000

From the figures it will be seen that the working capital of the business is £2000, and that payment of the creditors in full can only be made if the sums owing by the debtors are collected, and the stock, or a part of it is sold for £6000. Therefore, if for any external cause the value of the stock shrinks by more than 25 per cent, then its complete realization at the new price level will not suffice to pay the creditors in full. If £2000 of additional stock were bought on credit the above figures become—

Creditors . .	£12,000	Cash	£1,000
		Debtors . . .	£3,000
		Stock. . . .	£10,000

The working capital of the business is still unaltered at £2000, but the stock position possesses an element of even greater danger since a shrinkage in stock values of more than 20 per cent endangers the position of the creditors. It is evident, therefore,

that as the volume and value of stock increase, though it may not affect the amount of working capital, it lowers the percentage by which stock values may fall with safety. Stock tends to accumulate as general trade conditions improve, and the nearer to the peak of a boom the greater is the danger of a break in prices. The cardinal point to remember in assessing solvency is that stock in trade will not pay debts; and, in order to provide a margin of safety, the ratio of circulating assets to current liabilities should not fall below 2 to 1. Some experts consider that the ratio should be 5 to 1, and at least 3 to 1 if stock is excluded from the assets. It would be unwise to argue that a ratio of 2·1 to 1 spells safety, or that a ratio of 1·9 to 1 is a forerunner of disaster. This factor of safety is not an absolute figure, but rather an index to be considered in conjunction with other factors in the enterprise. In American industrial companies ratios of 8, 9, and 10 are quite common, but utility companies in general would show a ratio of under 2.

An indication of both the magnitude and variation of the ratio in English companies can be obtained from the following list, in which the figures refer to the financial year ending in the autumn of 1934.

	Current Assets £	Current Liabilities £	Ratio Approx.
J. Sears & Co., Ltd.	839,947	334,972	2·5
The London Assurance	1,979,953	1,745,112	1·1
Carreras Ltd.	4,517,754	729,956	6·2
Shell Transport & Trading Co. Ltd.	14,416,786	3,460,548	4·2
I.C.I. Ltd.	21,319,138	17,992,871	1·2
L.M.S. Railway	36,470,792	23,863,724	1·5
Imperial Tobacco Co. Ltd.	53,508,037	21,843,315	2·4

Where too great a fraction of the firm's capital has been sunk in fixed assets, such as land and buildings, working capital is correspondingly smaller; and the strain on it to provide an adequate return to the proprietors is greater. A reference to the two simplified Balance Sheets below will make this point clearer—

BALANCE SHEET (*a*)

	£		£
Capital	8,000	Working Capital	4,000
		Fixed Assets	4,000
	£8,000		£8,000

BALANCE SHEET (*b*)

	£		£
Capital	13,000	Working Capital . .	4,000
		Fixed Assets . . .	9,000
	£13,000		£13,000

In concern (*a*) £4000 working capital is available to provide, say, £400 net profit, or a 5 per cent return on the capital investment, whereas in concern (*b*) a similar amount of working capital, to provide an equivalent dividend, must earn £650. To do this the potential profit-earning capacity must be increased in the proportion of 13 to 8. If the earning capacity cannot be increased, the return on capital must fall to approximately 3 per cent. On the other hand, the ratio which the fixed assets bears to the capital in (*a*) is as 4 to 8 or 50 per cent, whereas in (*b*) it has risen to over 69 per cent. It may be said that the higher this percentage becomes, the safer is the position of the creditors.

Thus far we have considered only an isolated Balance Sheet, giving us the position of a firm at a particular date, and we now turn to two consecutive Balance Sheets.

BALANCE SHEETS OF R. W. BARKER

	Liabilities at			*Assets* at	
	31 Dec. 1934	31 Dec. 1935		31 Dec. 1934	31 Dec. 1935
	£	£		£	£
Capital A/c			Cash	1,000	2,000
Balance at 1st Jan.	9,000	10,000	Debtors . . .	9,000	7,000
add Net Profit .	2,000	1,000	Stock	6,000	9,000
			Plant and Machinery	2,000	3,000
	11,000	11,000	Land and Buildings	3,000	4,000
less Drawings .	1,000	1,000			
	10,000	10,000			
plus additional capital .		5,000			
		15,000			
Bank Loan . .	6,000	4,000			
Creditors . .	5,000	6,000			
£	21,000	25,000	£	21,000	25,000

There is a noticeable tendency at the present time for joint-stock companies to publish with each Balance Sheet the corresponding figures of the previous year. A shareholder could

previously, of course, compare the figures of one year with those of another but their publication in one report considerably facilitates this comparison. The possession of data concerning the position at two different dates naturally permits of a larger degree of mathematical analysis, and should indicate what has taken place during the year.

We may, for instance, say that the cash and stock balances have increased, or that the bank loan has been in part repaid. If a basic year were selected, these calculated increases and decreases in assets or liabilities might be expressed as a series of index numbers. It will be simpler, however, to calculate all the increases and decreases of both assets and liabilities and arrange them as follows—

(*a*) *Decreases in Assets*		
Debtors		£2000
(*b*) *Increases in Liabilities*		
Capital	£5000	
Creditors	1000	
		£6000
(*c*) *Increases in Assets*		
Cash	£1000	
Stock	3000	
Plant and Machinery	1000	
Land and Buildings	1000	
		£6000
(*d*) *Decrease in Liabilities*		
Bank Loan		£2000

These four amounts may be equated: for it will be seen that (*a*) plus (*b*) equals (*c*) plus (*d*). The value of this equation becomes more apparent if we consider the nature of each of the four parts of which it is composed. Decreases in assets, apart from depreciation, or kindred causes, arise when such assets are realized. Increases in liabilities, particularly in the case of the capital and creditors in the above illustration, mean the receipt by Barker of additional money and goods. Thus Barker has increased his funds during the year to the extent of £8000, from three sources: capital, creditors, and debtors. The remaining (*c*) and (*d*) give us an answer to the question "What has been done with these funds?" There has been an increased investment of £2000 in fixed assets and a further net addition to his stock of £3000, and, lastly, a partial repayment of the bank loan.

The equation of these amounts may be more simply stated as: the origin or source of additional funds equals their application or disposal.

There is one difficulty which may arise when this method of analysis is adopted for it may tend to vitiate the conclusions which may be drawn therefrom. Where the business is an

involved one and the resultant Balance Sheet complicated, there may from time to time be a re-grouping of items, so that the constitution of a particular item is not the same in each year. For example, "Creditors" in one Balance Sheet might become "Creditors and Sundry Credit Balances" in the next. Thus, what was apparently in the first instance a statement of external liabilities becomes in the second a statement of trade creditors plus an unstated amount of reserves of profit retained in the business. A comparison of the two amounts would not be the comparison of similar things, but of dissimilar liabilities.

Returning to the first ratio mentioned above, we see that the relation circulating assets bears to current liabilities rises from 1·4 (approx.) to 1·8, but that cash and debtors to these liabilities drops slightly from 10 to 11 to 9 to 10. When these ratios are considered in conjunction with the capital account they show a disquieting position, for despite the additional capital brought in, net profit has fallen. An imaginary revenue account has not been given, but the student should appreciate the fact that Barker may have transferred less profit to his Capital Account because he has adopted a bold policy in writing down his book debts. If his fixed assets have been depreciated by substantial amounts, then it follows that the amount invested in them is correspondingly greater, since they show a rise during the year. Had his Profit and Loss Account not been charged with such depreciation, the balance of capital at 31st December, 1935, would have been greater by the amount of the depreciation, and the value of the assets larger by a similar sum.

A further observation may be made on the above Balance Sheets. At the end of 1934 the creditors and the bank claim of £11,000, and the total assets amount to £21,000. Accepting the valuations given, we may say that 11/21 or just over 52 per cent of Barker's business belongs to persons outside it. A year later this percentage has fallen to 40 per cent, or, conversely Barker's claims to the assets shown have risen from 48 per cent to 60 per cent.

The ratio which the total of current or circulating assets of a firm bears to its current or short term liabilities is a measure of the firm's solvency. Granted that an enterprise can pay its debts as and when they arise, the proprietor, partners, or shareholders are obviously concerned as to its earning capacity. Realizing that his business possesses a low or unremunerative earning capacity, a sole trader would be wise to discontinue operations unless changes can be made which will give improved results. Partners are in the same position but shareholders, though part-owners in a joint-stock company, are normally not responsible

for management. If, therefore, in their opinion, the profits earned are inadequate, shareholders will endeavour to sell their holdings and invest the proceeds in more profitable undertakings. Thus, such calculations as can be made to measure the earning capacity of enterprises are of real value and it is to a consideration of these that attention is now directed.

BALANCE SHEET OF THE ENGINEERING COMPANY LTD.,
At 31st December, 1934

		£		£
Authorized Capital:			Goodwill	73,000
300,000 Ordinary Shares,			Land & Buildings	24,000
£1 each		300,000	Plant & Machinery	1,000
			Office Furniture	1,000
Issued Capital:			Motor Vans	1,000
300,000 Ordinary			Investment in Subsidiary	
Shares, £1 each,			Co.	120,000
fully paid		300,000	Stock	39,000
General Reserve		20,000	Debtors	31,000
Creditors		21,000	Bills Receivable	9,000
P. & L. A/c			Cash in Hand and at Bank	70,000
Balance at 31st	£			
Dec., 1933	9,000			
add Profit for				
1934	10,000			
„ Dividend received from				
Subsidiary Co.	9,000			
		28,000		
		£369,000		£369,000

As the Engineering Company Ltd. has a balance of cash in hand and at bank two and a half times greater than the balance at the credit of its Profit and Loss Account it could distribute the whole of this profit to its shareholders. Such a distribution would be at the rate of $9\frac{1}{3}$ per cent on the issued capital and though the general reserve would be untouched there would be no "carry forward" for 1935. To say that the company's earning power is $9\frac{1}{3}$ per cent is to forget two points: (1) that the balance of profit brought forward from 1933 was obviously not earned in 1934, and (2) that a further £9000 was not earned by the parent company but by a subsidiary. It is the investment of £120,000 shown among the assets that entitles the holding company to its dividend of £9000, which is a $7\frac{1}{2}$ per cent return on the investment. The student is warned that if the shares of the subsidiary company were acquired at a price representing a premium on their nominal value, then the actual rate at which the dividend was declared

would be higher. Further, if the payment of the dividend were made "less tax," the rate declared would be even greater. Thus, viewing earning capacity on the basis of the above figures, we see that £10,000 was the profit of 3⅓ per cent available for the £300,000 share capital.

This profit of £10,000 was, however, earned by the use of the company's assets from which must be excluded the £120,000 invested externally. It would not be fair to calculate the profit as being made by assets totalling £249,000 for at the 1st January, 1934, the Engineering Company's assets were valued at a lesser sum. If it be assumed that the company's assets at the beginning of the year were valued at £200,000, then the profit made represents a return of 5 per cent.

Looking ahead we may make another calculation. Assume that of the Profit and Loss Account balance, the company disburses £18,000 in the form of dividends the Balance Sheet at 1st January, 1935, would read—

	£		£
Issued Capital	300,000	Goodwill	73,000
General Reserve	20,000	Land & Buildings	24,000
Creditors	21,000	Plant & Machinery	1,000
P. & L. A/c Balance	10,000	Office Furniture	1,000
		Motor Vans	1,000
		Stock	39,000
		Debtors & Bills	31,000
		Bills receivable	9,000
		Cash in Hand and at Bank	52,000
			231,000
		Investment in Subsidiary Co.	120,000
	£351,000		£351,000

It will be seen that the claim of the shareholders of the company at 1st January, 1935, amounts to £330,000, for the General Reserve and Profit and Loss Account balance are sums owing to them, which they have allowed to remain in the business. As a manufacturing unit, the company may be said to be working with assets whose net value is £210,000, i.e. £231,000 less creditors of £21,000. Thus the additions to the Profit and Loss Account, other than any dividend declared by the subsidiary, will represent the profit earned for an investment of £330,000 by assets valued at £210,000. Assuming this profit to be £11,000 we may say that $\frac{£11,000}{£330,000} \times 100$ or 3⅓ per cent is the return on the investment

and that $\frac{11,000}{210,000} \times 100$ or 5·2 per cent (approximately) is the return on the assets employed.

For use in City and commercial circles the analysis of a Balance Sheet is approached from a rather different angle. The Exchange Telegraph Co. Ltd., among its many other activities, operates a daily statistics card service. Each card gives details of a company's interests, its directors, capitalization, official prices of shares and the condensed Balance Sheets of the last three years. In addition, an analysis of the company's financial position at the end of the last three years is made. An extract of the statement referring to the position of John Brown & Co. Ltd. as at 31st March, 1935, is given below—

	£	£
Liquid Assets:		
Cash	554	
£48,100 3% Treasury Bonds at cost	49,785	
Sundry Debtors less Reserve	117,024	
Owing by Subsidiaries	2,160	
Coal rents paid in advance	36,545	
Stocks and work in progress (less Instalments received) Tools and Duplicates	117,117	
		323,185
Deduct; Current Liabilities; Creditors for Supplies, Loans, Bank Overdraft (secured by Debentures) Accrued Charges and Reserves for Contingencies	1,116,537	
Owing to Subsidiaries	3,107	
Debenture Interest Accrued	6,917	
		1,126,561
Excess of Current Liabilities over Liquid Assets.		803,376
Fixed Assets:		
Freehold and Leasehold Land, Buildings, Plant and Machinery, etc., comprising Shipyard and Engineering Works, Collieries and House Property with additions, less sales and depreciation	1,551,922	
Investments in Subsidiaries with additions, less sale	2,176,181	
Trade and other Investments and Loans with additions, less sale	244,877	
Loans	34,585	
		3,204,189
Deduct: 6% First Mortgage Debentures redeemable at par in 1965 or at various rates prior to that date	561,821	
Less: Investments in names of Trustees	928	
		560,893
Carried Forward		2,643,296

	£	£
Brought Forward		2,643,296
Deduct: 6½% Second Mortgage Debentures redeemable at par in 1965 or at various rates prior to that date		425,668
Surplus Assets over Liabilities		2,217,628
Deduct: Preference Shares ranking *pari-passu* for repayment; 7% "A" Non-Cumulative Preference Shares of 12s. each, fully paid . .	525,000	
7% "B" Non-Cumulative (Convertible) Preference Shares of 6s. each, fully paid . .	515,970	
		1,040,970
Amount available for Ordinary Shares (as undernoted)		£1,176,658

Made up as follows	£
Capital Reserve	44,955
Reserve Account	200,000
Profit and Loss Balance	97,673
Issued Ordinary Shares	
2,758,328 Shares of 6s. each, fully paid .	834,030
	£1,176,658

Notes

Contingent Liabilities at 31st March, 1935—

(1) Bank guarantee in respect of another company amounting to £1218.

(2) Contingent liability to contribute to the liabilities of a trade association.

(3) Uncalled liability on shares of other companies £3568.

(4) Guarantee in respect of £100,000 debenture stock being issued by a subsidiary company for capital extensions.

What may appear a somewhat involved form of calculation will, on closer study, be shown to be essentially simple. There is first the recognition of the difference of character and purpose existing between fixed and current assets. Then there is a similar classification of liabilities and the admission of the claims of debenture-holders, preference shareholders and ordinary shareholders in that order of priority. Stated simply, there is first the test of solvency effected by deducting current liabilities from current assets. To this difference is added the value of the fixed assets and from this total is taken the value of the debentures leaving a sum which represents the claims of all classes of shareholders. This amount, £2,217,628 in the above illustration, is then subjected to the claims of the holders of the "A" and "B" preference shares and the final figure of £1,176,658 is obtained. Finally the composition of this last sum is analysed and shown to be composed not only of the ordinary share capital but of the balances of the two reserves and the Profit and Loss Account.

CHAPTER 14

OVER-CAPITALIZATION—THE VALUE OF SHARES

OVER-CAPITALIZATION

THE existence of over-capitalization and under-capitalization implies that there must be, in each instance, a basic or adequate capitalization with which comparison is made. It is obvious that the wide range and great variety of business enterprises make one fixed base, applicable to all cases, impossible. Thus, adequate or inadequate capitalization in any one case depends on the interaction of a number of factors, whose joint effect is peculiar to that case. Over- or under-capitalization is, therefore, a relative matter and not something definite; changes may occur which may tend to increase or diminish the degree of either of them.

Over-capitalization may be defined as the condition existing when the par value of a concern's capital exceeds its actual value based upon the profits earned. By this definition under-capitalization arises when the actual value of concern based on its profits exceeds the par value of its capital. The consideration of some instances where over-capitalization may be said to obtain should show in what manner it may arise and the results which may be expected to follow in its train.

As a first instance, let us assume that the proprietor of a business, whose net assets, inclusive of goodwill worth £5000, are valued at £50,000, desired to form a limited company which shall take over his concern. The purchase price is fixed at £60,000; and this is satisfied by the issue of shares. Were a Balance Sheet of the company drawn up, it would appear as follows—

Liabilities	£	*Property*	£
Share Capital . .	60,000	Assets	45,000
		Goodwill . . .	15,000
	£60,000		£60,000

It will be seen that there is more issued share capital than net assets acquired and the necessary equilibrium can only be reached by the addition of a further £10,000 to the goodwill, which asset is now overvalued. Or, we say that £10,000 of the share capital is not represented by assets; and to that extent the capital is

watered and that the new company is over-capitalized. If profits are made and distributed to the shareholders the degree of over-capitalization continues to exist and may even increase if depreciation has been under-estimated. An alternative policy is possible for during a prosperous period the directors might elect not to distribute any dividends but to retain profits internally. The Balance Sheet at the end of such a period might read—

	£		£
Share Capital	60,000	Assets	50,000
P. & L. A/c	5,000	Goodwill	15,000

A transfer of the Profit and Loss Account balance to the credit of goodwill would reduce its book value to the figure of £10,000 —a sum of £5000 nearer its real value. Then the goodwill value plus the remaining assets approximate more closely to the par value of the share capital and the state of over-capitalization has been considerably modified if not entirely eradicated.

A similar case arises when two or more businesses are amalgamated; a fact which may be verified by reference to amalgamations which took place during the early period of trust formation in the United States. Capital issued to the promoters or taken up by the investing public must be represented by productive assets if over-capitalization is not to exist. As has already been shown, when prices fall the value of such assets tends to fall so that if assets are acquired during a boom period and a depression in trade follows, there is a natural tendency towards over-capitalization. If, during a boom period, assets are written up, that is, their value is increased, then bonus shares may be issued. At the time and under the conditions then ruling, capitalization may be adequate but should the general trade position deteriorate then the tendency is definitely towards over-capitalization. Though the values of assets may be adjusted from time to time, the shareholders will expect dividends on their bonus shares as well as on those for which they subscribed. In other cases, where the plant is greater than is required to meet the current demand for the firm's products we may say again that over-capitalization exists. The reverse tendency is true when assets are obtained cheaply in a period which is followed by prosperous times. Their profit-earning capacity is proportionately greater since they are earning dividends for a smaller amount of capital and the enterprise is then deemed to be under-capitalized.

Certain definite results, which follow a state of continued over-capitalization, merit attention. The values placed on a corporation's shares by investors are naturally and mainly influenced

by the dividends received rather than by the actual profits made by the firm. The expectation of a higher than normal dividend is sufficient to cause the market value of a share to rise and the rumour of a lower dividend will depress the price. Thus the normal investor regards a company as over-capitalized when the dividends received over a period of years is not considered adequate. If a company is heavily capitalized, its fixed charges on overdrafts, loans or debentures are bound to be heavy. To meet these charges and yet maintain profits two possible courses of action suggest themselves. First, in an endeavour to sell more of its products, additional advertising expenditure may be incurred and a policy of price-cutting may be initiated. Second, the charge for depreciation may be diminished beyond the point of safety and the setting aside of reserves of profit, even if desired, becomes an impossibility. When such a concern meets with trade reverses through unsuccessful management or even mismanagement the only solution may prove to be the drastic one of reducing its share capital.

THE VALUE OF SHARES

In dealing with the accounts of public joint-stock companies it was shown that their subscribed capital was composed of one or more types of shares which were transferable from one shareholder to another. Such transfers, whether they involve the payment of money, the transfer of other shares or assets, necessitate the valuation of the shares bought and sold. In so far as the valuation of shares is bound up with accounts, a discussion is cognate to the purpose of these pages. Two warnings may be given with advantage at this stage. The prices quoted in the public press or on the Stock Exchange are not necessarily always a reliable index of value since they are influenced by the volume and the time of the transactions taking place. Thus, if the demand for a particular company's shares is greater than the supply of shares for sale, the price will tend to rise; conversely, if the numbers of shares offered is greater than the demand prices fall. When, however, the demand or supply is stimulated by artificial means, the resulting prices must, in some measure, be divorced from the price justified by the company's present financial position. Under such conditions, the shares are in the nature of counters in the hands of speculators. Further, since it is not the duty of auditors to value shares but to examine the company's records and accounts, the value of the auditor's "certificate" for valuation purposes is normally not of direct value.

In a number of other circumstances it becomes necessary to place valuations upon shares. If, for example, on the dissolution

of a partnership it is desired to transfer the firm's investments to one or more of the partners, the amount to be debited to the capital account must be ascertained. But if a firm's assets include shares which are being sold to another enterprise the value of all the assets must be calculated. The proposed investment of money in the shares of a limited company is partially governed by the values placed upon the shares which may be subsequently acquired.

BALANCE SHEET OF X LTD.
at 3rd December, 1935

Liabilities			*Assets*	£
Nominal Capital:	£			
100,000 Ordinary Shares of £1 each . .	100,000			
		£		
Issued Capital: 50,000 Ordinary Shares £1 each, fully paid .		50,000	Sundry Assets . .	63,000
Creditors . . .		3,000		
P. & L. A/c Balance .		10,000		
		£63,000		£63,000

An examination of the Balance Sheet of X Ltd. shows that if the assets could be realized at their book value a sum of £63,000 would be obtained, of which sum the creditors would claim £3000. The holders of 50,000 shares would in this event receive £60,000, or, in other words, each share would be worth 24s. This result is obviously based on the assumption that the assets can be sold for their book values; but we may well ask whether such an assumption is justified. If the assets included such items as preliminary expenses or share discount they would have to be disregarded entirely, whilst the values of such assets as land, buildings, plant and machinery would have to be considered in the light of the X Company's depreciation policy. There is, therefore, the possibility that certain assets may be worth the amounts stated and it is equally possible that others may be worth more than their book values.

It was stated earlier in these pages that the two main reasons for making investments are based on the anticipated changes in the purchase prices of shares, and on the future profits in the form of dividends. Since anticipated price changes are more closely associated with speculation we will consider the factor of expected profits for it, too, will have its effect on share prices. Turning to the Balance Sheet it may be said that the price of the shares of

X Ltd. will depend on the fraction of the £10,000 balance in the Profit and Loss Account, which will be distributed. If we assume that the company will carry forward half this amount, then it can declare a 10 per cent dividend. For every share held, a payment of, say, 2s. will be made in the near future and the problem of the potential shareholder recedes into the more distant future. This becomes apparent when it is realized that, though an investor would readily buy for an immediate dividend, he would be deterred from buying, or would offer a lower price if there seemed no reasonable chance of the rate of dividend being maintained on future occasions. The student, anxious to know what would be paid for a share, when no regard is paid to the future, will realize that if the £1 shares cost £1 the return is 10 per cent but if they cost £2 the percentage return is halved. Therefore, a shareholder who feels that he should obtain a return of $7\frac{1}{2}$ per cent will be prepared to pay $\frac{10}{7\frac{1}{2}} \times$ £1 or £1 6s. 8d. for each share. Thus the problem of price paid by the investor will resolve itself into the factors of future profits and the percentage return expected on the capital invested.

The estimation of the future profits of an enterprise requires the consideration of a number of influences not many of which may be calculated with precision. An examination of past profits, their regularity, the degree of their variation and the rate of increase or decrease give a mathematical basis. Profit depends on turnover, which may be built up by the sale of many relatively cheap articles or by the sale of fewer but more expensive goods. Any fall in the physical volume of sales of expensive articles is bound to affect profit more seriously than a decrease in the sales of cheaper goods where the profit is smaller. Hence it should be noted that the consumer demand for luxury goods is subject to changes in its purchasing power as well as in its taste. Of the factors less susceptible of exact estimation may be instanced the degree of monopoly possessed by a firm or the severity of competition which it must face. Two further possibilities which will affect profit must be noted: the possibility of taxation or other political action, and the likelihood of sales being diverted to substitutes.

The percentage return on invested capital expected by the purchaser of shares depends mainly on the risk which the shareholder considers he is taking. Two factors affect the chance of profit being distributed as dividend; the type of the concern in which investment is made and the kind of share purchased. For example, the percentage return on long-dated British Government Loans, where the security is excellent, will naturally be less

than on the loans of foreign governments. The chances of dividend from the shares of insurance companies, public utilities and heavy engineering firms are increasingly less certain; whilst there is a final group of concerns, such as rubber and mines, in which investment may be considered as highly speculative. Within each class of undertaking there will be variations arising from the financial strength of the company and the general standard of efficiency with which it is administered. When we narrow our consideration down to the shares of one particular company, we are bound to notice that the different types of shares constituting the capital possess different rights which, in turn influence the chance of receiving profits. In the illustration of X Ltd., this factor did not arise as the shares were all of one type and thus enjoyed the same rights.

BALANCE SHEET OF Y CO. LTD.
At 31st December, 1935

Nominal Capital:		£		£
50,000 6% Preference Shares, £1 each .	£50,000			
50,000 Ordinary Shares, £1 each .	50,000			
		100,000		
Issued Capital:		£		
50,000 6% Preference Shares, £1 each .		50,000	Assets	116,000
50,000 Ordinary Shares, £1 each . . .		50,000		
Creditors . . .		6,000		
P. & L. A/c Balance .		10,000		
		£116,000		£116,000

Let us assume that Y Co. Ltd. is in a reasonably sound financial position but, owing to the type of trade in which it is engaged preference shareholders feel that their risk should be recompensed at the rate of 7½ per cent and the ordinary shareholders at 10 per cent. It must be observed that the rate of dividend to which a preference share is entitled need not be the same figure as the rate which the holders may think reasonable. Preference shares in two concerns in entirely different sections of industry may each be entitled to receive 6 per cent on the normal value of the shares but the degrees of risk and their chances of obtaining the dividend

may be quite different. After all depreciation charges have been met, future profits are estimated at £13,000, of which sum the preference shareholders will receive £3000 and the ordinary shareholders £10,000. Then the values of the shares on these assumptions would be—

Preference Shares $\frac{6\%}{7\frac{1}{2}\%}$ of £1 = $\frac{4}{5}$ of £1 or 16s.

Ordinary Shares $\frac{10\%}{10\%}$ of £1 = £1

This Balance Sheet is of a simple character and contains no such difficulties as may be expected in actual practice. But had the dividend on preference shares been in arrears, there would be less profit available for the ordinary shareholders and, in consequence, the value of their shares would be less. Had the ordinary shares been only partly paid, the fact of the contingent liability of the holders would depress the values. Doubts of the company's ability to earn proportionately greater profits if the capital were called up would not tend to raise prices. Again, if Y Ltd. had guaranteed the dividend of another company and it was expected that the guarantee would have to be met, the values of both types of shares would react unfavourably. On the other hand, the reserves of undistributed profit disclosed by a Balance Sheet and the knowledge of the existence of inner reserves not disclosed, would tend to raise the values of both shares. The student will appreciate the value of the calculations on page 108 showing the number of times the profits pertaining to each class of shares were covered.

CHAPTER 15

COST ACCOUNTS

In an earlier chapter the essential difference of the problem facing the accountant of a manufacturing concern and the accountant of a wholesaling or retailing business was noted. The manufacturer purchases raw material but sells a manufactured article. It is the records arising from the process of conversion of raw material to finished product that are termed cost accounts. Such accounting methods as are applied in an industrial undertaking must, of necessity, depend on such factors as the nature of the specific industry, the particular organization and the class of product manufactured. An engineering plant may be one engaged in mass production of one or a variety of articles. It may be concerned with a gigantic contract, or with a number of simple but dissimilar jobs. A factory may be highly departmentalized or a chemical works may be carrying on a number of intricate processes and a knowledge of costs is essential in each case. This wide variety of operations, with their varied objectives, necessitates the use of different methods in recording results. A builder requires to know his contract costs, a transport undertaking its "costs per ton mile," or a mass production factory its costs per unit or group of output. It is outside the scope of this treatment to give a detailed analysis of all or of any one of these types, and it is proposed instead, to state some of the more important implications of cost accounts.

From the records and statistical data made and collected there should emerge a figure of cost, but other important advantages will also accrue. Where department costs are collected, the relative efficiency of such departments may be assessed. If, however, commodity costs are obtained a concern should be able to decide which are its most lucrative selling "lines." The efficiency of its cost finding methods directly affects the number of contracts obtained by a concern which tenders prices for its work. Too high an estimate might result in losing an order and too low a figure might involve the firm in substantial loss. In all firms the cost records should disclose as to how far the raw materials are carefully used and needless waste avoided. Inefficient workmanship would be discovered, recorded, and minimized. The relation between sums paid as wages and the amount of work received in return therefor is shown by a concern's costing records. It will be seen that these records form the basis for

internal administration, control, and the assessment of the manufacturing results achieved.

The ascertainment of costs presents a variety of problems which call for both technical knowledge and experience on the part of the accountant if his results are to be reliable. If we consider some of the more patent difficulties in their simplest form, we shall appreciate more fully the solutions subsequently proposed. A cabinet-maker, employing several men, is engaged in the manufacture of tables, bookcases, wardrobes, and sideboards; and desires to know his costs. He would probably make bulk purchases of his raw materials, wood; and other minor purchases of such manufactured articles as glass and metal fittings. Would it be possible and reasonable to add all his expenses together and divide the sum so obtained by the number of articles made? Such a mathematical calculation is possible but hardly reasonable, since it would mean that any oak bookcase would be said to cost as much as any mahogany sideboard. This arithmetical method might suit the cabinet-maker but it is doubtful whether it would suit the potential purchaser, who would probably point out that there was not the same amount or the same kind of wood in each article. With these seeds of doubt sown in his mind, our cabinet-maker would presently admit that a bookcase took less time to make than a sideboard or, in other words, an employee was paid less for making the bookcase. So that a solution to the problem of more accurate costs in this instance involves, at the least, a measure of analysis because of the variety of the products manufactured. Could our cabinet-maker confine his operations to an absolutely uniform type of wardrobe or sideboard, his costing problem might be considerably simplified; for, having made allowances for unused materials, he might divide his ascertained costs by the number of articles produced.

To return to our cabinet-maker who, let us assume, rents his workshop, uses electric light and perhaps power, and also incurs such further expenditure as rates and insurance. These varied items—the firm's overhead expenses—present another problem in apportionment, since if the maker does not recoup these outlays he will have to bear them himself and therefore work at a loss. At this point let us suppose that this problem of the allocation of overhead expenditure to his output has been solved. The cabinet-maker may be said to have covered his actual expenses if he can sell his products for the total expenditure incurred; but he will naturally desire a profit. What amount of profit can he add in order to arrive at his selling price? A desire to ride in his own light car rather than in a public conveyance would make

him suggest a high figure, but potential purchasers would now draw his attention to the lower prices of his competitors. As we may assume he possesses no monopoly and as the sales of furniture for the typical small house of the present generation are not great, he brings his selling prices into some conformity with others' prices for similar articles.

We may summarize our conclusions into the following problems—

1. The ascertainment of detailed information regarding raw materials used and wages paid.
2. The ascertainment and allocation of overhead expenditure.
3. The fixation of selling prices.

The second problem, the allocation of overhead expenses, is not simplified when it is remembered that selling prices must generally be fixed before the exact figure of the expenditure is known. Thus an article made, say, in January and sold in February, must bear not only a share of the expenses incurred in the first two months of the year but also those of the last ten. It is thus essential, to make careful preliminary estimates based on past experience, to be reviewed at reasonable intervals in the light of current results. An alternative method is to ascertain from a firm's ledgers the exact overhead expenditure incurred in a financial period and to allocate this amount to the output of the succeeding period. A disadvantage of this procedure lies in the succession of a period of relatively high expenditure by a period of low output. Costs calculated in these circumstances will tend to be higher, and if selling prices and actual sales cannot be increased proportionately, by virtue of competition, then a measure of profit must be foregone. For the purpose of illustrating the possible methods of allocation the following facts are assumed—

	£	£
Total direct labour charges	10,000	
,, cost of materials used	5,000	
Prime cost		15,000
Overhead expenses:		
(a) Factory	4,000	
(b) General	6,000	
		10,000
Total cost		25,000
,, number of hours run by machines during period		160,000

In connexion with two distinct jobs, let us assume that—

	Job 1	Job 2
Direct labour charges	10s.	20s.
Cost of material	5s.	30s.
Machine hours worked	6	8

Now it is evident that this manufacturing firm must include in its total charges a sum of, at least, £15,000 if it is not to incur a loss on its wages and materials costs; or, put more simply, it must be paid at least 15s. and 50s. for the two jobs. If only 15s. and 50s. were received in respect of these jobs, then it is apparent that no portion of the total overhead expenditure of £10,000 has been recouped by the makers. Thus, in addition to the prime costs of 15s. and 50s. for the two jobs, the firm must get or try to get some fraction of the £10,000 spent in administrative and distributive expenses if it is, as our American friends say, "to break even." The three following methods are therefore attempts to spread or allocate this expenditure in such a manner that the products may be sold in a competitive market and the oncosts recovered. The reader will note that, so far, no mention of or provision for profit has been made.

METHODS OF ONCOST ALLOCATION

Labour Basis. As the total factory overhead expenditure of £4000 represents 40 per cent of the total direct wages paid we could decide to add that percentage of 10s. and 20s. to the price of the two jobs. Thus the costs of the two jobs would now stand at—

	Job 1		Job 2	
Direct labour charge	10s.		20s.	
Cost of materials	5s.		30s.	
Share of factory oncost (40% on wages)	4s.		8s.	
	—	19s.	—	58s.

The general expenditure or office overheads of £6000 represents 60 per cent of the total direct wages bill and to apportion a share of this amount, we might add a further 6s. and 12s. to the respective jobs. Our costs now show—

	Job 1			Job 2		
	£	*s.*	*d.*	£	*s.*	*d.*
Factory cost of production		19	–	2	18	–
Share of general expenses		6	–		12	–
Total cost	1	5	–	3	10	–

Material Basis. It will be seen that the total factory expenditure is 80 per cent of the cost of materials and that the general expenses equal 120 per cent of the same figure. Using these percentages, we may build up our costs as follows—

	Job 1 £ s. d.	Job 2 £ s. d.
Direct labour charges	10 –	1 – –
Cost of material	5 –	1 10 –
Prime cost	15 –	2 10 –
Share of factory oncost (80% of material)	4 –	1 4 –
Factory cost	19 –	3 14 –
Share of general oncost (120% of material)	6 –	1 16 –
Total cost of production	£1 5 –	£5 10 –

At this stage it should be noticed that by the above calculation the cost of the first job is £1 5s. in each case but that by allocating overhead expenditure on a material basis rather than on a labour basis the cost of the second job has been raised from £3 10s. to £5 10s.

Machine Hour Basis. On the assumption that the total hours run in the factory during the course of a year number 160,000 and the total overhead expenditure for the same period is £10,000, we may say that this latter sum is equivalent to an expenditure of 1s. 3d. per machine hour. Using this rate of 1s. 3d. per hour, we are able to apportion overhead expenditure to the two jobs in the following manner—

		Job 1 £ s. d.	Job 2 £ s. d.
Direct labour charges		10 –	1 – –
Cost of material		5 –	1 10 –
Prime cost		15 –	2 10 –
Share of overhead expenses	6 hrs. @ 1s. 3d.	7 6	
Share of overhead expenses	8 hrs. @ 1s. 3d.	—	10 –
		£1 2 6	£3 – –

A similar method of allocation is possible by employing a man-hour rate which would be arrived at by dividing the total overhead expenditure by the number of productive hours worked by the employees during the period.

Below are collected the various costs that result from the adoption of the different methods of allocation and from these we may see the range existing between the maximum and minimum figure in each case.

	Job 1 £ s. d.	Job 2 £ s. d.
Cost when overheads are distributed on a wages basis	1 5 –	3 10 –
Cost when overheads are distributed on a material basis	1 5 –	5 10 –
Cost when overheads are distributed on machine hours	1 2 6	3 – –

From these varying costs the principle emerges that there is no one correct cost of production but that a number of different costs of production may be ascertained, each dependent on a series of assumptions made during its calculation. This is not to say that one figure is more reasonable than another. In the above illustration those costs obtainable by the last method would appear the most reasonable to adopt. As they are the lowest, they offer the widest scope to the manufacturer in the fixation of his selling price. Before making a final decision, however, regard would have to be taken of the costs of production of the remaining jobs with which the firm is concerned.

None of the above methods of apportionment is sacrosanct for each must be judged by the results produced. In the printing trade a standard form of cost accounts has been evolved, and there is a natural tendency for firms engaged in the same industry and, therefore, confronted with the same problems to approximate their methods of arriving at cost and of spreading overhead expenditure. The cost of production is not a fixed amount but one which will vary according to the assumptions made. It follows that the basis on which apportionment is carried out must ensure a price which will enable the article to be sold in a competitive market. A manufacturer whose overheads are, say, 55 per cent of his productive wages bill may add 66⅔ per cent as this is a more easily ascertainable figure. He could use the excess margin of 11⅔ per cent for bargaining purposes for he could reduce his selling price by 11⅔ per cent of his wages as an added inducement to a prospective customer to buy. A change in the method of allocation may make this possible, for the burden of oncost on one product may be eased and another made to bear a larger share, without materially affecting the sales. It is essential, however, that both factory and administrative expenses should be recovered in full from the purchasers or consumers, for otherwise the manufacturer will be called upon to bear the balance. Where the making of profit is not possible during a temporary difficult period, a firm would probably continue production on a modified scale in order to meet its fixed charges. Where production is carried on at a loss and there is scant prospect, if any, of a change for the better, the concern may

wisely decide to cease operations. The degree of importance of the fixed charges is of importance, for when such charges are heavy the tendency is to carry on work.

The following figures afford a simple illustration of a method of costing applied to a cheap article, a lady's overall, produced by mass-production methods.

PRODUCTIVE CHARGES

	£
Wages of forewoman, cutters, ironers	1285
Rent	400
Rates	100
Electric light and power	50
Gas	10
Sewing cotton etc.	75
Stationery	30
National Health Insurance	250
Fire and Burglary Insurance	150
Paper and string	50
	£2400
Direct Wages—i.e.	3200
Administration Salaries, Depreciation, etc.	2000

Ladies' overalls are sold by the manufacturers to wholesalers or to large department stores at prices quoted per dozen, hence the costing procedure should bear this fact in mind. It must, also, be remembered that though sewing cotton and buttons, etc., are used, it is not practicable to assess the values of such materials per dozen of the output. The same principle applies to the expenses incurred in respect of workroom stationery, paper, and string. A similar list to that given above of the productive expenses of this character over an annual period is obtained from the manufacturer's ledger.

Using this information we may now proceed to cost a dozen overalls—building up a cost sheet on the following lines—

	£	s.	d.
Machinist's wages per dozen		2	–
Cost of 30 yards of material @ 6d. per yard		15	–
Binding—48 yards at ¼d. per yd.		1	–
Proportion of overhead expenditure		1	6
Discount			3
		19	9
Profit of 15%, say		3	–
	£1	2	9
Probable manufacturer's selling price per dozen	£1	2	11

Several of these items require explanation. The expenses incurred in the workroom, termed productive charges, amount to £2400, or 75 per cent of the total direct wages paid. Therefore, 75 per cent of the machinist's wages per dozen, or 1s. 6d., is added so that the manufacturer is allocating his overheads on the basis of wages. In purchasing his material, the maker is allowed discount on the selling price. Were the sum of 3d. not added, the net return received by the manufacturer would be lower and his net profit correspondingly smaller. Thus, in effect, the wholesaler is charged a sum equal to the discount he will subsequently receive. The observant reader will have noticed that in arriving at the figure of £1 2s. 9d. no apparent provision has been made for the administrative salaries and expenses of depreciation. Experience has taught the manufacturer that if he adds 15 per cent to his basic cost of 19s. 9d., such a sum, in total, will cover the above expenditure and leave him a margin of profit which he considers adequate. If the theorist insisted on the addition of another percentage it might be expressed as under—

	£	s.	d.
Basic charges		19	9
Add 62½% of wages 2s. (£2000 = 62½% of £3200) .		1	3
	£1	1	–

To bring this figure up to the corresponding figure of £1 2s. 9d. he may add only 1s. 9d. which is only 8⅓ per cent of £1 1s.

QUESTIONS

1. "Expenditure should be controlled at its source and, its proration between departments is, therefore, wrong in principle." Discuss this statement.

2. It has been said that the aim of industry is to keep in proper balance the three primary elements of industrial action—wage level, dividend level, and price level. Discuss this view.

3. "The god of profit erected on the foundation of price level was, for the most part, worshipped by industry regardless of human and social values." Discuss this quotation in which the speaker was referring to the nineteenth century.

4. Discuss the following figures which refer to the percentage operating results of over 400 department stores in the United States—

	1931	1932	1933	1934
Net Sales . . .	100·0	100·0	100·0	100·0
Net Cost of Sales . .	102·8	106·4	102·1	100·9
Other net income . .	3·8	4·0	3·9	3·5

5. Which do you consider more important: (*a*) the compilation of average cost figures of a group of similar factories for comparative purposes, or (*b*) the development of uniform methods of accounting in the same group?

6. If it be assumed that it is necessary in industry to create a "quality sense," a "money sense," and a "time sense," how would you propose to foster these senses by the use of a firm's accounts?

7. A manufacturer of motor cars finds that in 1933 it cost him £36,003 to manufacture 350 cars which he sold at £135 each. This cost was made up of—

	£
Materials	14,100
Direct wages	16,200
Factory overhead expenses	2,430
Establishment and general expenses	3,273
	£36,003

For the 1934 season he estimates—

(1) That each car will require materials to the value of £40 and an expenditure in wages of £45.

(2) That the factory overhead expenses will bear the same ratio to direct wages as in the previous year.

(3) That the percentage of establishment and general expenses on factory cost will be the same as in the previous year.

Prepare a statement showing the profit he should make per unit if he reduces the price of the car by £5. *R.S.A.*

8. "Many indirect expenses involve the management in problems of a non-merchandising character!"

Discuss this view in relation to the problem of analysing indirect expenditure.

9. To what extent do you consider that it is advisable to maintain agreement between the financial and costing records of a manufacturing business? Give reasons for your answer and explain, in particular, how you would deal with the records of purchases and wages.

R.S.A.

10. Comment on the following figures which refer to an electrical power company's results. 000's are omitted.

	Generation Expenses	Distribution Expenses	Sale of Current	Gross Revenue
	£	£	£	£
1929	252	70	792	839
1930	245	67	771	819
1931	203	71	674	758

CHAPTER 16

MECHANIZATION OF ACCOUNTS

The increasing mechanization of processes of manufacture and transport has been an outstanding characteristic of the economic history of the world during the last hundred years. Man's application of mechanical principles to the work of writing and calculation was inevitable. The growth in number, size, and complexity of modern business units has entailed a corresponding growth in their accounting and statistical requirements. Machines of various types were therefore invented to cope with the additional demands made by businesses and to solve the problems in the most economical method possible. Hence the logical function of office machinery is to fit the needs of the office, for it is not the function of the office organization to fit the machines. If the truth of this statement be granted, it follows that the introduction and use of machinery in an office should be preceded by an investigation by a qualified consultant, conversant with both business methods and the capabilities of machines. If such an investigation were carefully carried out, it would ensure not only the installation of the most suitable machines but also the purchase or lease of the most economical number. Moreover, the installation of machines involves the initial capital expenditure of their cost and revenue expenditure in the form of the necessary operating expenses. Wherever mechanization has been intelligently applied, it is claimed there has been a corresponding and appreciable reduction in the ratio of operating expenses to sales or revenue.

The causes for this are to be found in the reduction of overlapping and duplication of labour, and the analytical value of the statistics whose rapid preparation is made possible by mechanization.

Accounting machines may be divided into two main groups. Firstly, there is the development from the typewriter with a full alphabetical and numeral keyboard, enabling the operator to give the customer and/or client full details of his purchase or sale. This group may be further sub-divided into two sections: one with fixed or inbuilt registers, and the other where the registers or totalizers are placed on a horizontal rack, either in front or at the back of the machines. The latter have the advantage of flexibility since they can be moved easily to any required position.

The second main group is a development from the adding machine by the addition of keys with abbreviations such as "Gds" for Goods and "Csh" for Cash, etc., on one key—thus extending the action of purely listing and adding so as to include ledger posting, statements, etc. Further reduction in labour has been effected by the introduction of machines whereby the typing of multiple forms can be carried on continuously while the carbons move automatically between the forms. These devices permit not only of the mechanical insertion and removal of carbons, but of flexibility, since forms of varying widths of paper up to 12½ inches may be typed at the same time, and notations may be made on some of the twelve copies and not on others. Finally, it is hardly surprising that models are in use wherein the machine movements and the processes of addition or subtraction are done by electricity.

The possibilities of the typewriter cum totalizer group of machines may be appreciated when it is realized that one machine unit is capable of making the following records—

(*a*) Wages and Sales Analysis.
(*b*) Sales Ledger and Statements.
(*c*) Bought or Creditors Ledger.
(*d*) Invoices and Day Book.
(*e*) Cash Book, Receipts and Cheques.

An abbreviated example of Sales Analysis is shown on p. 148.

The operator who desires to carry out this analysis would require five totalizers or adding boxes, used respectively for the total and the three commodities whose sales are to be analysed and the cross totalizer. The first name is typed, to be followed by the figures given in the total column and under A and B. In this case the total being known, if a correct analysis is made in the two commodity columns the machine will print a star through the operation of the cross totalizer, which is visible proof that accuracy has been maintained. When the total is unknown, the machine can be made to arrive at the figure mechanically and to prove that all the correct totals are filled in. When the second line is typed the first totalizer will show £660, the A one £220, and the B or third £440. When the fifth name and the accompanying amounts have been typed, the grand total of £2290 is analysed into the three sub-totals of £720, £1240 and £330. Though this illustration is simple in character, it should be noted that machines are available which are equipped to add many more columns vertically and provide the net cross total of each line. The size of the vertical totalizer and the rack is the only limit to the number of columns.

Name	Fol.	Total	A	B	C
Atkinson, J.	80	460. 0. 0	120. 0. 0	340. 0. 0*	
Blake, L.	81	200. 0. 0	100. 0. 0	100. 0. 0*	
Buller, H.	82	650. 0. 0	450. 0. 0		200. 0. 0*
Cullum, E.	83	900. 0. 0		770. 0. 0	130. 0. 0*
Dawson, M.	84	80. 0. 0	50. 0. 0	30. 0. 0*	
		2290. 0. 0	720. 0. 0	1240. 0. 0	330. 0. 0

Before giving an example of mechanized accounting as applied to Sales Ledger work, it should be noted that the separate accounts, statements, and audit sheets or journal are posted and balanced simultaneously. The accuracy of the individual debit and credit postings is proved instantly by agreement of the machine-made totals of postings with the pre-determined totals. As accounts and statements are being prepared at the same time the latter are ready to be forwarded to the debtor at any time. A Sales Ledger Control Account is prepared, the balance of which is that required for the Trial Balance.

The facts which it is proposed to record in the following example are as follows—

Debtors	Balances brought forward at 1st January £ s. d.
Adams, James & Co.	1042 16 8 (*Dr.*)
Baker Sons & Co.	1164 12 8 (*Dr.*)
D. David Ltd.	11 3 8 (*Cr.*)
Total of debit balances in ledger	2207 9 4
Net debit total	2196 5 8

	Adams James & Co. £ s. d.	Baker Sons & Co. £ s. d.	D. David Ltd. £ s. d.
Sales to	12 14 4	48 1 8	11 3 8
Cash received from	22 18 1	106 18 3	
Discount allowed to	1 1 8		

The Statement for the first of these accounts would be as under—

STATEMENT

MODERN APPLIANCES LTD.

MESSRS. ADAMS, JAMES & CO.

140 *South Street, S.W.*4.

Date	Item	Debit £ s. d.	Credit £ s. d.	Balance £ s. d.
1934	To Accounts rendered	1042 16 8		1042 16 8
Jan. 1	To Goods	12 14 4		1055 11 –
1	By Cash		22 18 1	
	Discount		1 1 8	1031 11 3

The following are the ledger accounts of the three named firms—

A/c. No.

Name Adams, James & Co. Address 140 South Street, S.W.4.

Date	Item	Debit	Credit	Balance	Proof
1934					
Jan. 1	Bal. from O/L	1042. 16. 8		1042. 16. 8	
Jan. 1	To Goods	12. 14. 4		1055. 11. 0	1042. 16. 8
1	By Cash		22. 18. 1		
	Discount		1. 1. 8	1031. 11. 3	1055. 11. 0

The departure from the conventional lay-out of a ledger account should give the student no trouble since all narrations are made in the same column. He will readily appreciate that a sale of goods, valued at £12 14s. 4d., to a debtor already owing £1042 16s. 8d., increases the debit balance to £1055 11s., and that when this is diminished by cash and discount of £23 19s. 9d., the final balance is £1031 11s. 3d.

A/c. No. Address 50 Camden Crescent, Oxford.

Date	Item	Debit	Credit	Balance	Proof
1934					
Jan. 1	Bal. from O/L	1164.12.8		1164.12.8	
Jan. 1	To goods	48. 1.8		1212.14.4	1164.12.8
1	By Cash		106.18.3	1105.16.1	1212.14.4

A/c. No.
Name D. David Ltd. Address 130 Eldon Street, W.

Date	Item	Debit	Credit	Balance	Proof
1934	Balance from O/L		11. 3. 8	11. 3. 8	
Jan. 1	To Goods	11. 3. 8		nil	11. 3. 8

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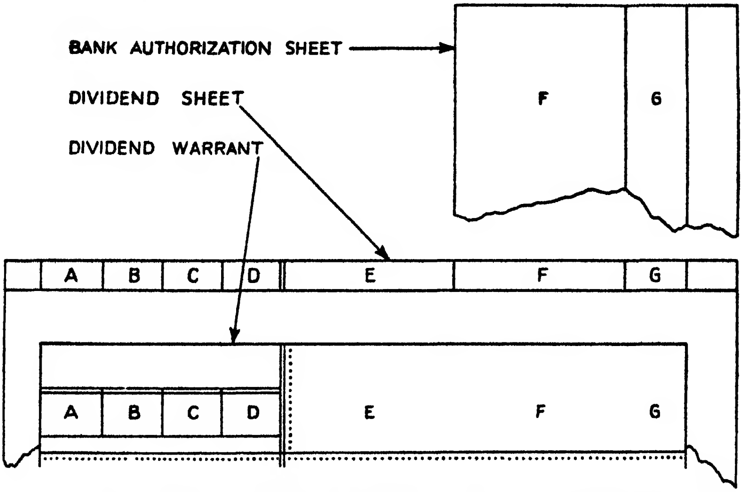
Subsequently the Sales Ledger Control Account, which the reader will recognize as an adjustment account, will be prepared and will appear as follows—

Date	Item	Debit	Credit	Balance	Proof
1934	Total balances from O/L	2207. 9.4	11. 3.8	2196. 5.8	
Jan. 1	Debits posted	71.19.8		2268. 5.4	2196.5.8
1	Cash and Disct. posted		130.18.0	2137. 7.4	2268.5.4

In this Control Account it should be noted that the total of all debits posted (£71 19s. 8d.) and of the cash received and discount allowed (£130 18s.) are pre-determined amounts which are obtained from an adding-listing machine. The audit sheet gives the complete summarized record of all transactions posted to the ledger, so that the last totals in it would be exactly the same as those given in the last three columns of the Sales Ledger Control Account.

Finally, it is proposed to give an illustration of the possibility of simplifying the payment of a less-tax dividend, involving the



preparation of the warrants, a bank authorization sheet and the dividend list.

The student should imagine that these three documents are placed in the same relative positions as shown. As the items of information A, B, C, etc., are typed on the dividend warrant they are reproduced on the dividend sheet and the bank authorization sheet. It will be apparent that the spaces between the lines of typed information on the bank authorization sheet and the dividend sheet need not be greater than the normal double space on the typewriter. The dividend warrant is but one of a set of continuous forms separated from each other by perforations. The typing to be done on each warrant is below that on the preceding warrant by a distance equal to the length of the shorter side, say, 3 inches. Between the typing of each line, therefore, the strip of warrants must move a greater distance than the two remaining documents and this result is obtained

by an automatic device. In the above diagram the letters represent the following information—

A—the number of shares held by each individual shareholder.
B—the gross dividend.
C—the income tax deducted at the standard rate.
D—the net dividend to be paid each shareholder.
E—the net dividend expressed in words and figures—e.g. One pound 3s.
F—the name of the payee.
G—the amount of the net dividend (D) expressed in figures only.

On receiving his warrant, the shareholder will detach and retain the left-hand portion, since, in addition to the information A, B, C, and D, it contains the certificate of the company's secretary that the income tax on the profits of the company, of which the dividend forms a part, has been or will be accounted to the proper officer for the receipt of taxes. The warrant proper is presented to the collecting and/or paying bank where it will be checked by the latter against the authorization sheet which it holds. From the dividend list the company will debit its Appropriation Account and credit its Dividend Account with the gross dividend. The total amount of tax deducted is, in turn, debited to the Dividend Account and credited to the Income Tax Account.

PUNCHED CARD METHOD

We may now turn to a consideration of that type of accounting machine or rather machine system which is known as the Punched Card method of accounting. This system works on the principle of recording original data in such a way that the record itself can be mechanically sorted and tabulated, and is, indeed, the medium which actuates the machines to produce the required accounting results. The basis of the system is a thin flexible card to which information is transferred by means of holes perforated in the card. The dimensions of the card used with the standard equipment are $7\frac{3}{8}$ in. × $3\frac{1}{4}$ in., but a smaller group of machines has been introduced using a card measuring $4\frac{11}{16}$ in. × 2 in., with a consequent reduction in both machine and stationery expenses.

Cards are divided into "fields" or groups of one or more columns which define the information conveyed by the perforations, while the horizontal position of each perforation indicates the figure (or letter) itself. Each hole therefore, represents a specific fact or part of a fact, and the completely punched card gives the essential details relating to one accounting transaction.

It is sometimes found that prior to the installing and use of the system all the data which have to be dealt with are coded

numerically. This, however, is not essential as alphabetical printing of information is a standard feature of this type of equipment.

Although the cards are standard as regards size and the horizontal values of the punching positions, they are by no means standard as regards the "fields" or grouping of the vertical columns. These "fields" are varied according to the requirements of the particular user, and the nature and extent of the information to be recorded. Thus the arrangement of the fields of a card intended for sales accounting is appreciably different from that of a card intended for the analysis of manufacturing costs.

For certain types of work what is known as dual purpose cards are employed. These cards are so called because they serve the dual purpose of an original hand-written record and (at a later stage) a punched card. Such cards are often used, for example, as materials requisitions where the card is a written instruction to the storekeeper to issue certain materials. When this has been done the storekeeper passes the card to the Powers Department where the details written on the card are punched into it so that it may serve as a basis for the necessary accounting records.

It will be appreciated that unlike a written character the holes perforated in the cards cannot be erased, and the whole idea on which the system works is that each item is recorded once only by punching and thereafter the punched cards may be passed through the machines time after time to reproduce the identical information in the various books of account or forms of account and analysis.

The machines involved are three in number corresponding to the three distinct stages in the system. They comprise (*a*) the punch, (*b*) the sorter, and (*c*) the tabulator, and together they perform the three functions of true accounting, viz.—

(*a*) the recording of the original data,
(*b*) the sorting and re-sorting of the data into classified groups, and
(*c*) the addition and subtraction of selected groups of figures and the tabulation of these results.

There are two main types of punches—hand punches and automatic key punches. In the case of the hand punches the cards are fed singly into the machine and the depression of numbered keys corresponding to the data to be recorded perforates the cards which move along, column by column, until the punching is completed, when the card is extracted by hand. With the automatic key punch a quantity of cards are placed in the machine, and the feeding, punching, and ejection of them is

entirely automatic. Moreover, unlike the hand punch, the depression of the numbered keys does not perforate the cards but merely sets up the necessary punches; and the actual perforation of the whole card is performed at one operation on the depression of a "punch key."

The correct punching of the cards is a *sine qua non* if the system is to be successfully worked and for this purpose efficient safeguards are provided in the form of verifying machines. Here again there are two types, a small hand verifier, similar in appearance and operation to the small hand punch, and a larger automatic verifier which mechanically ensures the absolute correctness of all the cards which pass through it.

The sorting machine is able to select the cards which contain the required facts and arrange them in the necessary groups at the rate of 24,000 per hour, sorting column by column. This classification process can be performed on the same cards time after time so that they can be arranged in every possible combination. Thus, for example, a batch of cards containing information regarding sales may be grouped according to salesman for the preparation of commission accounts. After the tabulation of this information, as described below, they may be re-sorted and grouped according to customer and so on.

The third stage introduces the most important unit of the system—the tabulator which automatically extracts from the punched cards the information they contain and presents it in printed form.

Groups of cards are fed into the Tabulator in the order previously arranged on the sorter, and the perforations in each card are mechanically sensed by the machine. Every position on the card is connected to its respective position on the printing head of the tabulator which by its operation produces a legible printed statement of the information punched on the cards in their correct sequence. As the machine is printing this information it is automatically accumulating all quantities and amounts and at the end of each group or account, totals or balances are printed out; grand totals are also obtained whenever they are required.

The machines are equipped with a special sheet feeding device, which enables invoices, statement forms, ledger sheets, and similar forms to be automatically fed into and ejected from the machine without stopping it. This has definitely brought punched card machines into the realm of book-keeping machines and has established the system as a complete accounting system. A complete set of books can be built up from punched cards and all different accounting operations of a business can be performed on the one tabulator, including the preparation of pay roll,

factory costing, invoicing, sales analysis and accounting, general accounting, etc.

The machines may be rented, hire-purchased, or purchased outright, the purchaser being safeguarded against mechanical trouble by guarantee.

A recent and successful application of the punched card system has been made to stock control and chain store accounting, in which a card is punched for every unit of stock held in the warehouse. As orders are received the corresponding number of cards for each commodity is pulled and a tabulation (three copies) gives the invoice, the warehouse advice note and the accounts copy. Further tabulations give analyses of sales by commodity, salesman, area, and so on. The cards remaining in the file represent the actual physical stock and can be tabulated at any time so that it is possible to obtain quickly the total quantities and values of the complete stocks held.

We may summarize the advantages of the punched card system of accounting as follows—

(*a*) Elimination of the human error factor. Once the original cards have been correctly punched, there is no danger of error from "listing," transfers of figures and posting; whatever is on the card is automatically and correctly reproduced.

(*b*) Flexibility. The punched card system does not involve a separate machine for each type of work. All accounting work of whatever nature can be performed on one and the same tabulator.

(*c*) Capacity. The capacity of the machines enables them to meet the needs of an expanding business without continual addition to their number.

(*d*) Unlimited opportunities for analysis, providing executives rapidly with all the vital statistics which are essential to present-day methods of management.

The third type of machine to be dealt with is based on the adding machine. When it is remembered that one firm alone, whose products include this type, markets over 450 different models with more than 2000 different optional features, their scope and variety are apparent. They can be obtained with or without full typewriter keyboard. When full typewritten description is not required on the accounts, the few descriptions that may be necessary are standardized and abbreviated, so that the word "Goods," for example, is recorded by depressing a single key marked "GDS." These machines, whether with or without typewriter keyboard, print a total or balance by the mere depression of one key. During the past few years so many improvements have been made on this type of machine that they are able to meet the requirements of any kind of accounting work.

To contrast the posting of a Ledger by means of pen and ink with the posting by machine we may give the following example—

J. SMITH & CO. (32 OXFORD ROAD, W.)

Dr.		£	*s.*	*d.*		*Cr.*	£	*s.*	*d.*
Oct. 1	To Balance .	10	–	–	Oct. 15	By Cash 367	100	–	–
„ 1	„ Goods 133	5	2	6		„ Balance .	9	9	9
„ 3	„ „ 154	2	5	–					
„ 9	„ „ 541	20	4	8					
„ 9	„ Carriage .		5	10					
„ 13	„ Goods 1220	10	10	6					
„ 13	„ „ 1221	50	–	–					
„ 26	„ „ 1346	11	1	3					
		£109	9	9			£109	9	9
Nov. 1	To balance .	9	9	9					

The machine would present this account in the following form—

NAME: J. Smith & Co.
ADDRESS: 32 Oxford Road, W.

Date	Reference	Charges	Date	Reference	Credits	Balance
			Oct. 1	B/FD		10 0 0
Oct. 1	Gds. 133	5 2 6				15 2 6
Oct. 3	Gds. 154	2 5 0				17 7 6
Oct. 9	Gds. 541	20 4 8				
Oct. 9	Cge. 541	5 10				37 18 0
Oct. 13	Gds. 1220	10 10 6				
Oct. 13	Gds. 1221	50 0 0				98 8 6
			Oct. 15	Csh.367	100 0 0	1 11 6 *Cr.*
Oct. 26	Gds. 1346	11 1 3				9 9 9

Certain advantages become apparent. There is uniformity, legibility, accuracy, and daily balancing. The amount owed by or to each customer may be ascertained instantly; the machine automatically adding debits and subtracting credits and printing the balance by the depression of one key. What is not apparent is that the machine automatically tabulates and ensures the correct alignment of the entries made. Time is further economized as dates, some of the reference numbers and cyphers, are produced automatically.

As the Ledger Account is being posted the machine will prepare a statement of account for dispatch to the customer and a proof tape. The proof tape shows the items posted to the accounts and also the difference between the old and new balances. If the total of the proof figure does not agree with the predetermined total of the items, the error may be quickly localized to the account in which it was made.

An alternative method, which makes use of the same principle, is that of the full-width proof journal of which an abridged example follows—

JOURNAL

Sheet No.		Debits		Date	
34 14 5	34 14 5	Apr. 2	Gds. 209	3 16 8	38 11 1
16 10 9	16 10 9	Apr. 2	Gds. 212	4 16 10	21 7 7
23 14 5	23 14 5	Apr. 2	Gds. 214	3 15 6	27 9 11
				12 9 0	87 8 7
					74 19 7
					12 9 0

The first and second columns of figures represent the opening balances of three accounts, the third set of figures are the debits made and the last column gives the concluding balances. It will be seen that the total of debtor's closing balances is £87 8s. 7d. and the opening total is £74 19s. 7d., a difference of £12 9s. As the total of debits is also £12 9s. the ledger accounts are proved correct.

Concerns may find it desirable to prepare a Sales Journal at the same time that a customer's Ledger Account is being posted. The columnar journal thus obtained enables the total of invoices posted to Ledger Accounts to be calculated as well as a distribution of this sum by departments or commodities. Purchases and cash disbursements or the pay roll may be treated in a similar manner. In contrast with the first group of machines noted in this chapter there are no totalizers or dial registers in use. The operations of addition, subtraction, printing and designation of credit balances are automatic, so that operating simplicity is combined with speed and accuracy.

When accounts in Stores Ledgers are opened the quantities of stores received and issued have to be posted in addition to their

monetary equivalents. These are posted simultaneously and a balance of each is maintained. The proof-journal, prepared at the same time, not only verifies the accuracy of the posting of the Stores Ledger but also the correctness of the pricing and extension of each requisition.

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Copper
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